8-1949

Endomorphisms and Translations of Semigroups

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I am submitting herewith a thesis written by Eldon E. Posey entitled "Endomorphisms and Translations of Semigroups." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Mathematics.

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ENDOMORPHISMS AND TRANSLATIONS OF SEMIGROUPS

A THESIS

Submitted to
The Committee on Graduate Study
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Master of Arts

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by

Eldon E. Posey

August 1949

ACKNOWLEDGMENT

The author wishes to express his appreciation for the valuable
assistance rendered him by Professor D. D. Miller, under whose direction
this paper was written.

ENDOMORPHISMS AND TRANSLATIONS OF SEMIGROUPS

0. Introduction

This thesis is a study of some of the properties of mappings of semigroups into semigroups. In Section 1, definitions and basic concepts are given, with brief mention of some well known properties of semigroups and of mappings. Section 2 is devoted to a few theorems which are useful in the process of finding the semigroup of all endomorphisms of a given semigroup. When theorems on endomorphisms are valid in the more general situation in which a semigroup is mapped homomorphically on another semigroup, we state and prove the theorems in the more general setting. Section 3 consists of some theorems and a short discussion of right and of left translations of semigroups. The rest of the paper is devoted to listing, in section 4, 1) the semigroups of all endomorphisms of semigroups of orders two, three and four, and 2) the semigroups of all right translations and of all left translations on semigroups of orders two, three and four.

We have occasion frequently to prove theorems about "one-sided" sub-systems, such as right (or left) ideals, zero elements, and identity elements. In such cases it is always clear that, by interchanging "left" and "right" in the theorem and its proof, the result is a "left-right dual" of the original and is equally valid. It will also be clear that if the hypotheses of a theorem are assumed to remain true when "left" and "right" are interchanged, then a "two-sided" theorem results. We shall avoid unnecessary repetition by omitting explicit mention of this duality except where the "two-sided" theorem is of especial interest.

As an appendix, we include a listing, compiled jointly by the author and Messrs. K. S. Carman and J. C. Harden, of the semigroups of orders two,

three, and four. From time to time we cite examples by number from this list; the digit to the left of the decimal point of each such number is the order of the semigroup, and the number following the decimal point gives the lineal position of the semigroup among all those of that order.

1. Definitions and basic concepts

Definition 1.1. A semigroup is a system consisting of a non-empty set of elements a, b, c, ... and a rule of combination having the following two properties:

(1) The rule of combination associates with each ordered pair of elements a, b an unique element c ; we usually speak of the rule of combination as "multiplication," call c the "product" of a and b (in that order), and express the association symbolically by writing $a \cdot b = c$ or $ab = c$, but on occasion we may use the terms "addition" and "sum" and write $a + b = c$.

(2) The rule of combination is associative, i.e., if a, b, and c are elements then $a(bc) = (ab)c$.

It is easy to show[1] by mathematical induction that the product of any ordered finite set of elements in a semigroup is definable uniquely.

Definition 1.2. A semigroup S is said to be _of finite order_, or to be _of infinite order_, (or simply to be _finite_ or to be _infinite_) according as S contains a finite or an infinite number of elements. The number of elements in a finite semigroup is called the _order_ of the semigroup.

Definition 1.3. A subset H of a semigroup[2] S is called a _subsemigroup_

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[1]See, for example, H. Zassenhaus, Lehrbuch der Gruppentheorie, (Leipzig and Berlin: Teubner, 1937), p. 1.

[2]No confusion will arise from the use of the same letter to denote both a semigroup and the set of elements of that semigroup.

it has an unique two-sided zero element and no other right or left zero.

Clearly, a (right, left, or two-sided) zero element is idempotent.

Definition 1.7. A non-empty subset R of a semigroup S is called a right ideal of S if $RS \subseteq R$. (We use $\subseteq$ for inclusion and $\subset$ for proper inclusion.) Similarly, a non-empty subset L is a left ideal if $SL \subseteq L$. If a subset M is both a right ideal and a left ideal, it is called a two-sided ideal, or simply an ideal, of S ; in this case we have $SMS = S(MS) \subseteq SM \subseteq M$. Right, left, and two-sided ideals of S are, of course, subsemigroups of S ; for if, for example, $RS \subseteq R$, then à fortiori $RR \subseteq R$. If A is any subset of S and R is a right ideal of S , then AR is a right ideal of S ; for $(AR)S = A(RS) \subseteq AR$. Similarly, if A is any subset and L a left ideal of S , then LA is a left ideal of S ; and if M is a two-sided ideal of S , then, for any subset A , AM is a right ideal, MA a left ideal, and MAM a two-sided ideal of S . Since S itself is a two-sided ideal of S , it follows that, for every subset A , AS is a right ideal, SA a left ideal, and SAS a two-sided ideal of S . In particular, if the subset A consists of a single element a , the right ideal aS is called the principal right ideal generated by a ; similarly, the sets Sa and SaS are known respectively as the principal left ideal and the principal two-sided ideal (or principal ideal) generated by a .

Definition 1.8. Since, as we have observed, a right, left, or two-sided ideal K of a semigroup S is itself a semigroup, it follows from Definition 1.7 that a subset R of K such that $RK \subseteq R$ is a right ideal of K , and similarly for left ideals and two-sided ideals of K . A right (left, two-sided) ideal of K need not be a right (left, two-sided) ideal of S , for $RK \subseteq R$ does not in general imply $RS \subseteq R$; for

example, if we take S to be the semigroup 4.59, K to be the set of elements (1, 2, 3) and R to be the set of elements (1, 3), we have KS $=$ (1,2) (whence K is a right ideal of S) and RK $=$ 1 (whence R is a right ideal of K), but RS $=$ (1, 2) $\nsubseteq$ R, whence R is not a right ideal of S . On the other hand, if R is a subset of K and R is a right (left, two-sided) ideal of S , then R is a right (left, two-sided) ideal of K ; for if RS $\subseteq$ R then <u>à fortiori</u> RK $\subseteq$ R . It is convenient to have a name for the relation between R and K ; if R is a right (left, two-sided) ideal of a semigroup S , we define R to be a right (left, two-sided) <u>subideal</u> of any ideal of S containing R .

<u>Definition 1.9</u>. A set A is said to be <u>mapped</u> <u>into</u> a set B by a mapping ϕ if ϕ is a rule which associates with each element of A one and only element of B ; mappings are often referred to by the more cumbersome term <u>single-valued</u> <u>transformation</u>, and are expressed symbolically by writing Aϕ $\subseteq$ B . In general, there may be elements of B to which no element of A is made to correspond by the mapping ϕ ; if this is not the case, <u>i.e.</u>, if to each element of B the mapping ϕ makes at least one element of A correspond, then A is said to be mapped <u>onto</u> B , and we write Aϕ $=$ B . In any case, the unique element of B to which an element a $\in$ A corresponds under the mapping ϕ is called the <u>image</u> <u>of</u> a <u>under</u> ϕ . If A_1 $\subseteq$ A and B_1 is the set of images of the elements of A_1 under a mapping of A into B , then B_1 is called the <u>image</u> <u>of</u> A_1 under this mapping; in particular, if A is mapped <u>onto</u> B , then B is the image of A . If Aϕ is a single element of B , ϕ is called a <u>constant</u> mapping. The set of <u>all</u> elements of A that are mapped onto a given element b $\in$ B is called the <u>complete inverse image</u> (or, when no confusion will arise, simply the <u>inverse image</u>) of b ; and the union (class sum)

of the complete inverse images of all elements of a subset B_1 of B is called the _complete inverse image_ (or simply _inverse image_) of b_1 .

Definition 1.10. The _product_ $\phi\psi$ of two mappings ϕ and ψ of a set A _into itself_ is defined to be the mapping which accomplishes the same result as that obtained by performing first[3] the mapping ϕ and then the mapping ψ ; _i.e._, if $a \in A$ and $a\phi = a'$ and $a'\psi = a"$, then $a(\phi\psi)$ is defined to be $a"$. More concisely, $A(\phi\psi)$ is defined to be $(A\phi)\psi$. Two mappings, ϕ and ψ , of a set A into a set B are said to be _equal_ if they have the same effect on every element of A , _i.e._, if $a\phi = a\psi$ for all $a \in A$; if this is the case, we write $\phi = \psi$. It is easy to show[4] that, with these definitions of product and equality, the multiplication of mappings of a set into itself is associative; _i.e._,

$\phi(\psi\chi) = (\phi\psi)\chi$. A mapping of A into B is said to be _one-to-one_ (abbreviated 1-1) or _biunique_ if the image of each element of A is the image of only one element of A ; symbolically, ϕ is a 1-1 mapping of A into B if $a \in A$, $a' \in A$, $a\phi = a'\phi$ imply $a = a'$. It is now clear that the set of _all_ mappings of a set A into itself forms a semigroup Φ under the multiplication defined above, and that, since the product of two mappings of A _onto_ A is a mapping of A _onto_ A , the set of _all_ mappings of A _onto_ A is a subsemigroup of Φ . Furthermore, since the product of two 1-1 mappings of A into A is clearly 1-1, the 1-1 mappings also form a subsemigroup of Φ . We note in passing that, if A is an

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[3]Many authors use $\phi\psi$ to denote the result of performing first ψ , then ϕ ; if this is done, it is convenient to write $\phi A \subseteq A$ instead of $A\phi \subseteq A$.

[4]See, for example, Birkhoff and MacLane, _A Survey of Modern Algebra_ (New York: MacMillan, 1941), p. 125.

infinite set, a mapping of **A** onto **A** need not be 1-1; for example, let **A** be the set of positive integers, let $1\phi = 1$, and let $n\phi = n-1$ for $n > 1$; then $1 = 1\phi = 2\phi$, $2 = 3\phi$, and in general $n = (n+1)\phi$, so that **A** is mapped onto **A** by ϕ, but ϕ is not 1-1. Conversely, a 1-1 mapping of an infinite set **A** into itself need not map **A** onto **A**; for example, let **A** be the set of positive integers again, and let $x\phi = 2x$ for any $x \in$ **A**; then ϕ is 1-1 but the image of **A** under ϕ is the proper subset of **A** consisting of the positive even integers. On the other hand, if **A** is a finite set then all 1-1 mappings of **A** into itself are onto, and all mappings of **A** onto itself are 1-1. If the number of elements in a finite set **A** is k, the semigroup of all mappings of **A** into **A** we shall call the transformation semigroup of degree k. For any set **A**, finite or infinite, the class of all 1-1 mappings of **A** onto **A** forms not only a semigroup but a group[5]; in general, this group is a subgroup of the semigroup of all mappings of **A** onto **A**, and also a subgroup of the semigroup of all 1-1 mappings of **A** into **A**, and if **A** is finite the three coincide. For a finite set **A** of k elements, the group of 1-1 mappings of **A** onto **A** is called the symmetric group of degree k; it is a subgroup of the transformation semigroup of degree k.

Definition 1.11. If **A** and **B** are semigroups and ϕ is a mapping of **A** into **B**, ϕ is called a homomorphism if, for any elements a_1, a_2 of **A**, $(a_1 a_2)\phi = a_1\phi \cdot a_2\phi$. It follows immediately that if $A_1 \subseteq$ **A** and $A_2 \subseteq$ **A** then $(A_1 A_2)\phi = A_1\phi \cdot A_2\phi$. If $A\phi \subseteq$ **A** and ϕ is a homomorphism, ϕ is called an endomorphism of **A**. The image of a semigroup **A** under a homomorphism ϕ is a semigroup, i.e., if

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[5]Birkhoff and MacLane, op. cit., p. 152.

$A\phi = C \subseteq B$ then C is a semigroup; for if c_1, $c_2 \in C$ and if a_1 and a_2 are any elements of the inverse images of c_1 and c_2, respectively, then $(a_1 a_2)\phi = a_1\phi \cdot a_2\phi = c_1 c_2$, whence $c_1 c_2$ is the image of an element $a_1 a_2 \in A$ under the homomorphism ϕ, and therefore $c_1 c_2 \in C$. The image set C is said to be a <u>homomorphic image</u>, or <u>homomorph</u>, of A. If a homomorphism ϕ is a 1-1 mapping, ϕ is called an <u>isomorphism</u>, and the domain and range of ϕ (A and $A\phi$, respectively) are said to be <u>isomorphic images</u>, or <u>isomorphs</u> of each other. If ϕ is an isomorphism and $A\phi = A$ (not merely $A\phi \subseteq A$), ϕ is called an <u>automorphism</u> of A. The product of two endomorphisms ϕ and ψ of a semigroup A is an endomorphism of A, for if a_1, $a_2 \in A$ then

$$(a_1 a_2)(\phi \psi) = [(a_1 a_2)\phi]\psi = (a_1\phi \cdot a_2\phi)\psi = (a_1\phi)\psi \cdot (a_2\phi)\psi$$
$$= a_1(\phi\psi)\cdot a_2(\phi\psi) \in A$$

It is an immediate consequence of this fact and the remarks in Definition 1.10 that the product of automorphisms of a semigroup A is an automorphism of A. Hence the set of all endomorphisms of a semigroup A is itself a semigroup, containing as a subsemigroup the set of all automorphisms of A; in fact, as is easily shown, the automorphisms form a <u>group</u>[6] having for its identity element the <u>identity mapping</u> defined by $x\phi = x$ for all $x \in A$, and having for the inverse of a group element (automorphism) the <u>inverse mapping</u> ϕ^{-1} defined, for all $x \in A$, by the relation $x\phi^{-1} = y$ if and only if $y\phi = x$.

[6]Birkhoff and MacLane, <u>op. cit.</u>, p. 152. Birkhoff and MacLane prove the theorem for automorphisms of a group, but the proof holds <u>mutatis mutandis</u> for automorphisms of semigroups.

2. Endomorphisms of semigroups

Our first theorem characterizes semigroups S having the highly special property that every mapping of S into itself is an endomorphism. It will be clear from the characterization that there is (to within isomorphism) only one such semigroup of a given order; if such a semigroup S is of finite order k , the semigroup of all its endomorphisms is just the transformation semigroup of degree K .

Lemma 2.1. If every mapping of a semigroup S into itself is an endomorphism, then every element of S is idempotent.

Proof. Let $a \in S$. By hypothesis, the constant mapping $S\phi = a$ is an endomorphism, whence a is a subsemigroup of S . Therefore $a^2 = a$.

Theorem 2.1. A necessary and sufficient condition that every mapping of a semigroup S into itself be an endomorphism is that either every element of S is a right zero element or every element of S is a left zero element.

Proof of necessity. We shall show that if the elements of S are not all left zero elements then S contains at least one right zero element, and thence show that all elements of S must be right zero elements. Let a be a non-left-zero element of S . Then there is at least one element $x \in S$ such that $ax \neq a$; let x be any such element. Let $s \in S$ and let ϕ be any mapping of S into itself such that $(ax)\phi = ax$ and $a\phi = s$. By hypothesis, ϕ is an endomorphism, whence

$$s \cdot ax = a\phi \cdot (ax)\phi = (a \cdot ax)\phi = (a^2 x)\phi .$$

But, by Lemma 2.1, $a^2 = a$. Hence $(a^2 x)\phi = (ax)\phi = ax$. Now we have $s \cdot ax = ax$ where s is an arbitrary element of S . Therefore ax is a right zero element of S . Now let $y \in S$ and consider any mapping

ψ of S into itself such that $(ax)\psi = s$ and $y\psi = y$. By hypothesis, ψ is an endomorphism, whence $s = (ax)\psi = (y \cdot ax)\psi = y\psi \cdot (ax)\psi = y \cdot s$. Hence, y being an arbitrary element of S , the arbitrary element s is a right zero element of S .

Proof of sufficiency. Suppose every element of S is a right zero. Let a and b be any elements of S , let ϕ be any mapping of S into itself, and let $a\phi = a'$, $b\phi = b'$. By hypothesis, $ab = b$, whence $(ab)\phi = b\phi = b'$. Also, by hypothesis, $a'b' = b'$, whence $a\phi \cdot b\phi = a'b' = b'$. Therefore $(ab)\phi = a\phi \cdot b\phi$, whence the arbitrary mapping ϕ is an endomorphism. We argue similarly from the supposition that every element of S is a left zero.

Theorem 2.2. Under a homomorphism ϕ of a semigroup S onto a semigroup T , the complete inverse image of a subset T_1 of T is a subsemigroup of S if and only if T_1 is a subsemigroup of T .

Proof. The necessity has been demonstrated in Definition 1.11. To prove the sufficiency, let S_1 be the complete inverse image of a subsemigroup T_1 of T , and let a , $b \in S_1$. Then

$$(ab)\phi = a\phi \cdot b\phi \in T_1 ,$$

whence $ab \in S_1$ and S_1 is therefore a subsemigroup of S .

A constant mapping of a semigroup S onto an element c of a semigroup T is obviously a homomorphism if and only if c is idempotent. Conversely, we have

Theorem 2.3. Under a homomorphic mapping of a semigroup S onto a semigroup T , the complete inverse image of any idempotent element of T is a subsemigroup of S .

Proof. Let ϕ be a homomorphism of S onto T , let c be an

idempotent element of T , let R be the complete inverse image of c

under ϕ , and let a , b ∈ R . Then $(ab)\phi = a\phi \cdot b\phi = c \circ c = c$,

whence ab ∈ R . Hence R is closed under multiplication in S and

is therefore a subsemigroup of S .

Since any homomorphic image of a semigroup is a semigroup, it is

plain that if a semigroup is mapped homomorphically onto a single element

c then c is idempotent. Hence we have Theorem 2.3 in the stronger

form of the

Corollary. Under a homomorphic mapping of a semigroup S onto a semi-

group T , the complete inverse image of an element c of T is a

subsemigroup of S if and only if c is idempotent.

We proceed now to some theorems on the images and inverse images

of ideals under homomorphisms.

Lemma 2.2. If M is a subset of a semigroup S , ϕ is a homomorphism

of S onto a semigroup T , and R is a subset of M such that

RM ⊆ R , then R$\phi \cdot$ Mϕ ⊆ Rϕ .

Proof. R$\phi \cdot$ Mϕ = (RM)ϕ ⊆ Rϕ .

Corollary 1. If M is a subsemigroup of a semigroup S and R is a

right ideal of M , then the image of R under a homomorphism defined

on S is a right ideal of the image of M .

Taking M = S in Corollary 1, we have

Corollary 2. Under a homomorphism defined on a semigroup S , the image

of a right ideal of S is a right ideal of the image of S .

Theorem 2.4. Under a homomorphism ϕ of a semigroup S onto a semigroup

T , the complete inverse image of a right ideal of T is a right ideal

of S .

Proof. Let N be a right ideal of T and let R be the complete inverse image of N under ϕ . Then $(RS)\phi = R\phi \cdot S\phi = N\cdot T \subseteq N$, whence $RS \subseteq R$ and R is a right ideal of S .

From this theorem and Corollary 2 to the preceding theorem we conclude

Corollary 1. Under a homomorphism of a semigroup S onto a semigroup T , the complete inverse image of a subset N of T is a right ideal of S if and only if N is a right ideal of T.

To say that an element c of a semigroup T is a right ideal of T is equivalent to saying that c is a left zero element of T . Hence, as a special case of Corollary 1, we have

Corollary 2. Under a homomorphism of a semigroup S onto a semigroup T , the complete inverse image of an element c of T is a right ideal of S if and only if c is a left zero element of T .

The importance of two-sided ideals and zero elements leads us to state separately the still more special

Corollary 3. Under a homomorphism of a semigroup S onto a semigroup T , the complete inverse image of an element c of T is a two-sided ideal of S if and only if c is a two-sided zero element of T .

Theorem 2.5. A homomorphism ϕ of a semigroup S onto a semigroup T maps the principal right ideal generated by an arbitrary element of S onto the principal right ideal generated by the image of that element.

Proof. Let $a \in S$ and let $a\phi = b$. Then $(aS)\phi = a\phi \cdot S\phi = bT$, the principal right ideal generated by b .

Since the principal right ideal generated by a left identity element of a semigroup is the semigroup itself, and the principal right

ideal generated by a left zero element is that left zero element itself,
we have the

Corollary. If a homomorphism ϕ of a semigroup S onto a semigroup T
maps a left identity element of S onto a left zero element of T ,
then ϕ is a constant mapping.

From the associativity of multiplication in a semigroup and the
definition of homomorphism, we see that, for any element a , any posi-
tive integer k , and any homomorphism ϕ , $(a^k)\phi = (a\phi)^k$. This
elementary fact yields immediately the following analogue of Theorem 2.5:
Theorem 2.6. A homomorphism of a semigroup S onto a semigroup T maps
the cyclic subsemigroup of S generated by an arbitrary element onto the
cyclic subsemigroup of T generated by the image of that element.

An immediate corollary (already obvious, since any homomorph of
a semigroup is a semigroup, and an idempotent element is itself a semi-
group) is that any homomorphic image of an idempotent element is idem-
potent. A second immediate consequence, which may also be inferred
directly from the corollary to Theorem 2.3, is the

Corollary. Under a homomorphism of a semigroup S onto a semigroup T ,
the cyclic subsemigroup of S generated by any element of the inverse
image of any idempotent element c of T is mapped onto c .
Theorem 2.7. Let T be a subsemigroup of a semigroup S , let f be
any element of S , and let H be the set of all elements of T for
which f is a right identity. Then H either is vacuous or is a left
ideal of T .

Proof. By definition of H , a $\in$ H if and only if a $\in$ T and
af $=$ a . Now if a $\in$ H and t $\in$ T we have $(ta)f = t(af) = ta$. But
ta $\in$ T , for t $\in$ T and a $\in$ H $\subseteq$ T and T is a subsemigroup of S .

Therefore $ta \in H$, whence H , if non-vacuous, is a left ideal of T .

Letting $T = S$, this theorem yields the

Corollary 1. In a semigroup S the set of all elements for which a given element is a right identity either is vacuous or is a left ideal of S .

If f is the given element in Corollary 1, then $f^2 = f$ implies $f \in H$; hence we have

Corollary 2. In a semigroup S the set of all elements for which a given idempotent element is a right identity forms a left ideal of S .

We note that the set H of Theorem 2.7, even if non-vacuous, need not be a left ideal of S if T is a proper subsemigroup of S . However, if T be assumed to be a left ideal instead of merely a subsemigroup of S , we have

Theorem 2.8. Let L be a left ideal of a semigroup S , let f be any element of S , and let H be the set of all elements of L for which f is a right identity. Then H either is vacuous or is a left subideal of L .

Proof. We recall that for H to be a left subideal of L means that $H \subseteq L$ and H is a left ideal of S . Let $a \in H$ and let $y \in S$. Then $(ya)f = y(af) = ya$. But $ya \in L$ since L is a left ideal of S . Therefore $ya \in H$, whence H , if non-vacuous, is a left ideal of S .

Letting $L = S$ in Theorem 2.8 we have Corollary 1 to Theorem 2.7, and then letting f be idempotent we have Corollary 2.

By left-right duality, Theorems 2.7 and 2.8 yield the result that with any element f of a semigroup S , and any subsemigroup T (right ideal R) of S containing at least one element for which f is a left

identity, there is associated the right ideal K of T (right subideal
K of R) consisting of all elements of T (of R) for which f is a
left identity. Now the set of all elements of T (of R) for which f
is a two-sided identity is just the intersection $H \cap K$. But the inter-
section of a left and a right ideal need be neither a left nor a right
ideal. See, for example, No. 4.64 in the Appendix, in which the elements
1, 3 form the right ideal of all elements of S for which the idem-
potent element 1 is a left identity, and the elements 1, 2 form the left
ideal of all elements for which 1 is a right identity, but in which their
intersection, consisting of the element 1, is not even a one-sided ideal.
However, any right, left, or two-sided ideal of a semigroup is a subsemi-
group, and the intersection of two subsemigroups is either vacuous or a
subsemigroup, whence we have

Theorem 2.9. Let T be a subsemigroup of a semigroup S , let f be
any element of S , and let M be the set of all elements of T for
which f is a two-sided identity. Then M either is vacuous or is a sub-
semigroup of T .

     Letting T = S we have

Corollary 1. The set of all those elements of a semigroup S for which
a given element of S is a two-sided identity either is vacuous or is a
subsemigroup of S .

     With T = S and the given element idempotent we obtain

Corollary 2. The set of all those elements of a semigroup S for which
a given idempotent element of S is a two-sided identity forms a sub-
semigroup of S .

     That the set of all elements for which a given idempotent element

is a two-sided identity need be neither a right nor a left ideal is shown
(and Corollary 2 to Theorem 2.7, its dual, and Corollary 2 to Theorem 2.9
are illustrated) by No. 4.84. In this semigroup, the set H of all ele-
ments for which the idempotent element 2 is a right identity consists of
the elements 1, 2, 3; and H is a left ideal. The set K of all ele-
ments for which 2 is a left identity consists of the elements 1, 2, 4;
and K is a right ideal. The set of all elements for which 2 is a two-
sided identity consists of 1 and 2; and this set H ∩ K is a subsemi-
group but neither a right nor a left ideal.

Analogous to the three preceding theorems on right identity ele-
ments are the following results on right zero elements.

Theorem 2.10. Let T be a subsemigroup of a semigroup S , let w be
any element of S , and let Y be the set of all elements of T for
which w is a right zero. Then Y either is vacuous or is a subsemi-
group of T , but Y is not a proper left ideal of T .

Proof. By definition of Y , a ∈ Y if and only if a ∈ T and
aw = w .   Now if a ∈ Y and b ∈ Y we have (ab)w = a(bw) = aw = w .
But ab ∈ T , for Y ⊆ T .   Hence ab ∈ Y , and Y , if non-vacuous,
is a subsemigroup of T . Now suppose Y is a left ideal of T . Then,
for any t ∈ T and any a ∈ Y , we have w = (ta)w = t(aw) = tw . But
this means that w is a right zero for every element of T , i.e.,
Y = T . Therefore Y cannot be a proper left ideal of T .

Letting T = S we have

Corollary 1. In a semigroup S the set Y of all elements for which
a given element is a right zero either is vacuous or is a subsemigroup

of S , and is not a proper left ideal of S .

If w is the given element in Corollary 1, then $w^2 = w$ implies $w \in Y$; hence we obtain

Corollary 2. In a semigroup S the set of all elements for which a given idempotent element is a right zero forms a subsemigroup of S , but is not a proper left ideal of S .

From the fact that the intersection of two subsemigroups is a subsemigroup, and the argument used in the proof of Theorem 2.10, we have

Theorem 2.11. Let T be a subsemigroup of a semigroup S , let w be any element of S , and let Z be the set of all elements of T for which w is a two-sided zero element. Then Z either is vacuous or is a subsemigroup of T , but Z is not a proper right or left ideal of T .

Corollary 1. In a semigroup S the set of all elements for which a given element is a two-sided zero either is vacuous or is a subsemigroup of S , but is not a proper right or left ideal of S .

Corollary 2. In a semigroup S the set of all elements for which a given idempotent element is a two-sided zero forms a subsemigroup of S , but is neither a proper right ideal nor a proper left ideal of S .

An analogue of the corollary to Theorem 2.5 follows from

Theorem 2.12. Under a homomorphism of a semigroup S onto a semigroup T containing a left identity element e , if $a\phi = e$ then every element of S for which a is a left zero is mapped onto e .

Proof. Let $b \in S$, $ab = a$. Then

$$b\phi = e(b\phi) = a\phi \cdot b\phi = (ab)\phi = a\phi = e .$$

Corollary. If a homomorphism ϕ of a semigroup S onto a semigroup T maps a left zero element of S onto a left identity element of T , then

ϕ is a constant mapping.

Corollary 2 to Theorem 2.7 states that the set of all elements of
S for which a given idempotent element a is a right identity forms a
left ideal L of S . We now sharpen this result by pointing out

Theorem 2.13. In a semigroup S the left ideal L of all elements of
S for which an idempotent element a is a right identity is just the
principal left ideal generated by a .

Proof. L consists of all elements $x \in S$ such that $xa = x$.
Now let $s \in S$; then $(sa)a = s(aa) = sa$, whence $sa \in L$ and therefore
$Sa \subseteq L$. But if $x \in L$ then $x = xa \in Sa$, whence $L \subseteq Sa$. Hence
$L = Sa$.

This leads to

Theorem 2.14. Under a homomorphism of a semigroup S onto a semigroup
T , if an idempotent element a of S is mapped onto a right identity
element of T then the set of all elements of S for which a is a
right identity is mapped onto T .

Proof. Let f be any right identity element of T , and let
$a\phi = f$. By Theorem 2.13, the set of all elements of S for which a
is a right identity element is just Sa ; and, by the dual of Theorem 2.5,
$(Sa)\phi = T(a\phi) = Tf = T$.

The foregoing theorem is of some utility in constructing the
semigroups of endomorphisms of finite semigroups, and in this connection
the following consequence is worth mentioning:

Corollary. Let S be a finite semigroup, and let a be any idempotent
element of S . Define the positive integer d(a) to be the number of

elements of S for which a is a right identity (i.e., let d(a) be the order of the left ideal Sa). Then if S can be mapped by a homomorphism ϕ onto a semigroup T with right identity element f , the order of T cannot be greater than the least integer d(a) such that $a\phi = f$.

Our next theorems, like the one preceding, are of interest primarily in the problem of finding all the endomorphisms of a semigroup of order n which has been constructed by adjoining an element to a semigroup of order n - 1 . First we note the obvious

Theorem 2.15. Under a homomorphism ϕ of a semigroup S onto a semigroup T , if an element a of S is the product of some two elements of S then the image of a is the product of some two elements of T .

Proof. Let $a = xy$. Then $a\phi = (xy)\phi = x\phi \cdot y\phi$.

We observe that if the homomorphic mapping ϕ is many-one then the converse of the theorem need not hold; for example, let ϕ be a constant mapping. Of course, if ϕ is an isomorphism the converse does hold, and we can say that an element of S is the product of some two elements of S if and only if its image is the product of some two elements of T .

Theorem 2.16. If a non-idempotent element a of a semigroup S is a two-sided zero element for all other elements of S , then the complete inverse image of a under any endomorphism ϕ of S is a itself.

Proof. By hypothesis, $a^2 \neq a$ and $as = sa = a$ for all $s \in S$ except a . Let $s \in S$, $s \neq a$, and suppose $s\phi = a$. Then $a\phi = (sa)\phi = s\phi \cdot a\phi = a \cdot a\phi$. But this is self-contradictory; for if $a\phi = a$ we have $a = a \cdot a$, and if $a\phi \neq a$ we have $a\phi = a \cdot a\phi = a$.

Many semigroups of order four may be constructed by adjoining an element (usually an identity or zero element) to semigroups of order three. This suggests that the determination of all endomorphisms of such a semigroup of order four might be facilitated by a study of the relations of such endomorphisms to those defined on a subsemigroup of order three. Dropping the restriction to semigroups of order four (and, indeed, the restriction to finite semigroups), we present in the concluding theorems of this section a brief study of the special case in which the element adjoined is a zero element of the resulting semigroup. Throughout the rest of this section, if S is a semigroup then S* will denote the semigroup formed by adjoining to S a two-sided zero element, the latter being denoted by O . We begin with some new definitions:

Definition 2.1. If ϕ is a mapping of a set M into itself and if a is an element of M such that $a\phi = a$, then a is called a fixed element of M under ϕ .

Definition 2.2. If ϕ and ψ are mappings defined on a set M and if $x\phi = x\psi$ for every $x \in M$, then ϕ and ψ are said to agree on M . If M is a subset of a set N , if ϕ and ψ are mappings defined on M and N , respectively, and if ϕ and ψ agree on M , then ψ is said to be an extension of ϕ , or, more fully, ψ is said to extend ϕ from M to N . If ϕ is a homomorphism defined on a subsemigroup M of a semigroup N , and ψ is an extension of ϕ from M to N , then ψ is said to be a homomorphic extension of ϕ (or an endomorphic, isomorphic, or automorphic extension of ϕ) provided ψ is a homomorphism (or endomorphism, iso-

morphism, or automorphism); we note that an isomorphism may have a homomorphic extension that is not isomorphic.

Theorem 2.17. Let ϕ be a homomorphism of a semigroup S into a semigroup T , and let ψ be an extension of ϕ from S to S^* . Then ψ is a homomorphic extension of ϕ if and only if 0ψ is an idempotent two-sided zero for $S\phi$.

Proof. To prove the necessity, let ψ be a homomorphic extension of ϕ to S^* , let $b \in S\phi$, and let $b = a\phi = a\psi$, where a is any element in the inverse ϕ-image of b . Then

$$b \cdot 0\psi = a\psi \cdot 0\psi = (a \cdot 0)\psi = 0\psi = (0 \cdot a)\psi = 0\psi \cdot a\psi = 0\psi \cdot b ,$$

whence 0ψ is a two-sided zero for $S\phi$. And since 0 is an idempotent element of S^* and ψ is a homomorphism, 0ψ is idempotent.

To prove the sufficiency, we observe first that, since ψ agrees with the homomorphism ϕ on S , we need only consider the effect of ψ on products $c \cdot 0$, $0 \cdot c$, and $0 \cdot 0$, where c is an arbitrary element of S . Let $c \in S$; then, by hypothesis, 0ψ is a two-sided zero for $c\phi$, i.e., $c\psi \cdot 0\psi = c\phi \cdot 0\psi = 0\psi = 0\psi \cdot c\phi = 0\psi \cdot c\psi$. But $c \cdot 0 = 0 \cdot c = 0$, whence

$$(c \cdot 0)\psi = 0\psi = c\psi \cdot 0\psi \quad \text{and} \quad (0 \cdot c)\psi = 0\psi = 0\psi \cdot c\psi .$$

Therefore ψ preserves products $c \cdot 0$ and $0 \cdot c$. Finally, 0ψ is idempotent by hypothesis, whence $0\psi \cdot 0\psi = 0\psi = (0 \cdot 0)\psi$. Hence ψ is a homomorphic extension of ϕ .

We note that, if ψ is a homomorphic extension of ϕ , 0ψ need be merely a two-sided zero for $S\phi$, and need not be an element of $S\phi$. For example, let S^* be No. 3.16, in which S consists of the elements

2 and 3 , and 0 is the element 1 , let ϕ map S onto 3 , and let ψ map 1 onto 2 .

In particular, Theorem 2.17 holds for extensions of endomorphisms of a semigroup, and we note the useful corollaries:

Corollary 1. If ψ is an extension of an endomorphism from S to S* and if $0\psi = 0$, then ψ is an endomorphic extension.

Corollary 2. If an endomorphism ϕ maps a semigroup S onto a subsemigroup having a two-sided zero element c , and if an extension ψ of ϕ from S to S* maps 0 onto c , then ψ is an endomorphic extension.

Any idempotent element of a semigroup constitutes a subsemigroup of order unity, and is of course a zero element for that subsemigroup. Aside from such trivial zero elements, however, it may happen that all the subsemigroups lack zero elements, and for such semigroups we have

Theorem 2.18. If no subsemigroup of order greater than unity of a semigroup S has a two-sided zero element, then 0 is a fixed element under every non-constant endomorphism of S* .

Proof. Let ψ be a non-constant endomorphism of S* ; then $S^*\psi$ is a semigroup, of order greater than unity, of which 0ψ is a two-sided zero element. Suppose, contrary to the conclusion we wish to establish, that $0\psi \neq 0$; i.e., suppose that $0\psi \in S$. Then either $S^*\psi \subseteq S$ or there exists at least one element of S which is mapped onto 0 by ψ . In the former case, 0ψ is a two-sided zero element of the subsemigroup $S^*\psi$ of S , and, since ψ was assumed to be non-constant, the hypothesis of the theorem is contradicted. In the latter case, let b be any element of S such that $b\psi = 0$. Then

$(0 \cdot b)\psi = 0\psi \in S$, while $0\psi \cdot b\psi = 0\psi \cdot 0 = 0 \notin S$, which contradicts the hypothesis that ψ is an endomorphism of S^* .

Theorem 2.19. If a semigroup S has no zero element and no proper two-sided ideals, and if 0 is a fixed element under an endomorphism ψ of S^* , then either $S^*\psi = 0$ or ψ is an extension of an endomorphism of S .

Proof. Since ψ is given to be an endomorphism of S^* , it is a homomorphism on S , and we have to prove that if $S^*\psi \neq 0$ then $S\psi \subseteq S$. Suppose, on the contrary, that $S\psi \nsubseteq S$. Then there exists in S at least one element b such that $b\psi = 0$; let b be any such element. By Corollary 3 to Theorem 2.4, the complete inverse image of 0 is a two-sided ideal B of S^* . Since $b \in B$, $B \cap S$ is non-empty; and if $S^*\psi \neq 0$ then, since $0\psi = 0$, we have $S\psi \neq 0$, whence $B \cap S \subset S$. Furthermore, $S^2 \subseteq S$, whence $xy \in B \cap S$ and $yx \in B \cap S$ for all $x \in S$, $y \in B \cap S$. Therefore $B \cap S$ is either a proper two-sided ideal of S or a two-sided ideal consisting of a single element (i.e., a two-sided zero element of S), contrary to hypothesis.

We note that in this theorem it is not sufficient to assume merely that S has no proper two-sided ideals, permitting S to have a two-sided zero element. For example, let S^* be No. 3.16, as in the example following Theorem 2.17, with 0 the element 1 , S consisting of the elements 2 and 3 , and the element 2 a two-sided zero element of S ; then $1\psi = 2\psi = 1$, $3\psi = 3$, defines a non-constant endomorphism of S^* which is not an endomorphism of S .

From Theorems 2.18 and 2.19 there follows immediately the

Corollary. If a semigroup S has no proper two-sided ideals, and if no subsemigroup of order greater than unity has a two-sided zero element, then every non-constant endomorphism of S^* is an extension of an endomorphism of S .

Since a constant mapping of S^* onto an idempotent element of S is clearly an extension of the mapping of S onto the same element, we might re-word the conclusion of the Corollary as follows: the only endomorphisms of S^* , aside from the constant mapping $S^* \psi = 0$, are extensions of endomorphisms of S .

Theorem 2.20. If A is a two-sided ideal in a semigroup S and ϕ is an endomorphism of S , and if ψ is a mapping of S^* into itself such that $A \psi = 0 \psi = 0$ and such that ψ agrees with ϕ elsewhere in S^* , then ψ is an endomorphism of S^* .

Proof. If x , y $\in$ S and x , y $\notin A$, the product xy is preserved under ψ because of the agreement of ψ and ϕ ; and products in which either element is 0 , or both elements lie in A , are obviously preserved. If $x \in S$, $x \notin A$, $y \in A$, then $xy \in A$, whence $(xy)\psi = 0$; but $x \psi \circ y \psi = x \psi \cdot 0 = 0$, whence $(xy)\psi = x \psi \cdot y \psi$. Therefore ψ is an endomorphism of S^* .

3. Translations of semigroups

The terminology and notation of this section follow the usage of A. H. Clifford. We are indebted to a forthcoming paper of Clifford, on extensions of semigroups, for several of the theorems of this section (in particular 3.1, 3.8 and its corollaries, and 3.9 and its corollary), and undoubtedly our other theorems (if true!) are also known to him. The

theorems presented here were chosen for their utility in constructing the semigroups of translations of semigroups of orders two, three, and four, and we have not undertaken a general or systematic study of these interesting transformations. At the end of the section we consider briefly a question raised by Clifford concerning the permutability of left and right translations of semigroups satisfying a certain cancellation condition.

Definition 3.1. If a mapping ρ of a semigroup S into itself satisfies the condition $(ab)\rho = a(b\rho)$ for every a, $b \in S$, then ρ is called a <u>right translation</u> of S. If λ is such that $(ab)\lambda = (a\lambda)b$, then λ is called a <u>left translation</u> of S. It is often convenient to write the symbol for a left translation on the left of the element to which it is applied, thus: $\lambda(ab) = (\lambda a)b$.

Theorem 3.1. The <u>set</u> <u>of</u> <u>all</u> <u>right</u> <u>translations</u> <u>of a</u> <u>semigroup</u> S <u>forms</u> <u>a</u> <u>subsemigroup</u> <u>of</u> <u>the</u> <u>semigroup</u> <u>of</u> <u>all</u> <u>mappings</u> <u>of</u> S <u>into</u> <u>itself</u>.

Proof. Let a, $b \in S$ and let ρ_1, ρ_2 be right translations of S. Then

$$(ab)(\rho_1\rho_2) = \left[(ab)\ \rho_1\right]\ \rho_2 = \left[a(b\rho_1)\right]\rho_2 = a\left[(b\rho_1)\ \rho_2\right]$$
$$= a\left[b(\rho_1\rho_2)\right],$$

whence $\rho_1 \cdot \rho_2$ is a right translation of S.

Theorem 3.2. If <u>a</u> <u>semigroup</u> S <u>is</u> <u>commutative</u>, <u>then</u> <u>every</u> <u>right</u> <u>trans</u>-<u>lation</u> <u>of</u> S <u>is</u> <u>also</u> <u>a</u> <u>left</u> <u>translation</u> <u>of</u> S.

Proof. Let a, $b \in S$, and let ρ be a right translation of S. Then $(ab)\rho = (ba)\rho = b(a\rho) = (a\rho)b$, whence ρ is a left translation of S.

Theorem 3.3. Every left zero element of a semigroup S is fixed under every right translation of S.

Proof. Let a be a left zero element of S, let $s \in S$, and let ρ be any right translation of S. Then $a\rho = (as)\rho = a(s\rho) = a$.

Our next theorem is analogous to Corollary 2 to Lemma 2.2 on homomorphisms, but is stronger in this respect: while the dual of the earlier result merely guaranteed that a homomorphic image of a left ideal of a semigroup S would be a left ideal of the image of S, the present theorem states that a right translation image of a left ideal of S is a left ideal of S itself. This clearly limits the extent to which a right translation can "shrink" a semigroup in which there are no small left ideals.

Theorem 3.4. Under any right translation ρ of a semigroup S, left ideals of S are mapped onto left ideals of S.

Proof. Let L be a left ideal of S, let $M = L\rho$, let $m \in M$, $s \in S$, and let x be any element of L such that $m = x\rho$. Then $sm = s(x\rho) = (sx)\rho$. But $sx \in L$ since L is a left ideal of S, whence $(sx)\rho \in M$. Therefore we have $sm \in M$ for arbitrary $s \in S$, $m \in M$, whence M is a left ideal of S.

Corollary 1. The image of a semigroup S under a right translation is a left ideal of S.

Since a single element of a semigroup constitutes a left ideal if and only if it is a right zero element, we have

Corollary 2. The image of a right zero element of a semigroup S under a right translation is a right zero element of S.

Corollary 2 may also be expressed by the statement that the set of all right zero elements of a semigroup is <u>invariant</u> under the class of all right translations. We note that, unlike Theorem 3.3 (which concerns the fate of left zero elements under right translations), this corollary does not imply that each right zero element is fixed under every right translation.

<u>Corollary 3.</u> <u>If a right translation of a semigroup</u> S <u>is a constant mapping, then the image is a right zero element of</u> S .

For the special case of principal left ideals, we have an easy parallel to Theorem 3.4:

<u>Theorem 3.5.</u> <u>The principal left ideal generated by an element of a semigroup</u> S <u>is mapped by any right translation</u> ρ <u>onto the principal left ideal of</u> S <u>generated by the image of that element.</u>

<u>Proof.</u> Let $a \in S$. Then $(Sa)\rho = S(a\rho)$.

<u>Corollary.</u> <u>If a right translation of a semigroup</u> S <u>maps an element</u> a <u>onto a right zero element</u> b <u>of</u> S , <u>then the principal left ideal generated by</u> a <u>is mapped onto</u> b .

A partial converse to Theorem 3.4 is furnished by

<u>Theorem 3.6.</u> <u>Under a right translation</u> ρ <u>of a semigroup</u> S , <u>the complete inverse image of any right zero element of</u> S <u>that lies in the image of</u> S <u>is a left ideal of</u> S .

<u>Proof.</u> Let $a \in S\rho$, $Sa = a$, and let L be the complete inverse image of a under ρ . Then $(SL)\rho = S(L\rho) = Sa = a$, whence $SL \subseteq L$ and L is therefore a left ideal of S .

<u>Theorem 3.7.</u> <u>Under a right translation</u> ρ <u>of a semigroup</u> S , <u>any idem-</u>

potent element a of S is a left identity for every element of the image of the principal right ideal generated by a .

Proof. Let $s \in S$. Then $(as)\rho = (a^2 s)\rho = [a(as)]\rho = a \cdot (as)\rho$.

Definition 3.2. The operation ρ_a of post-multiplying the elements of a semigroup S by a fixed element a of S maps S into itself, and is a right translation. For if x , $y \in S$ then

$$(xy) \ \rho_a = (xy)a = x(ya) = x(y \ \rho_a)$$

by the associative law. Such a mapping is called a special right translation. The image of S under the special right translation ρ_a is obviously the principal left ideal generated by a . Similarly, pre-multiplication by a defines a special left translation λ_a :

$$\lambda_a(xy) = a(xy) = (ax)y = (\lambda_a x)y \ .$$

The reader will recall the rôle played by these special translations in the proof of Cayley's theorem on the representation of groups as groups of transformations.[7]

Theorem 3.8. The special right translations of a semigroup S form a subsemigroup of the semigroup of all right translations of S .

Proof. Let x , a , $b \in S$. Then

$$x(\rho_a \ \rho_b) = (x \ \rho_a) \ \rho_b = (xa) \ \rho_b = (xa)b = x(ab) = x \ \rho_{ab} \ .$$

From the foregoing proof we have at once

Corollary 1. The correspondence $a \rightarrow \rho_a$ maps S homomorphically onto the semigroup of special right translations of S .

In case S has a left identity element, we have further the Cayley

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[7]See, for example, Birkhoff and MacLane, op. cit., p. 136.

theorem:

Corollary 2. A semigroup S having a left identity element is isomorphic with its semigroup of special right translations.

Proof. If, under the homomorphism $a \rightarrow \rho_a$, elements a and b of S are mapped onto the same right translation (i.e., if $\rho_a = \rho_b$) then $xa = x \rho_a = x \rho_b = xb$ for all $x \in S$. Hence, if S contains a left identity element e , $a = ea = eb = b$; the homomorphism is then an isomorphism.

Theorem 3.9. If a semigroup S has a right identity element, then every right translation of S is a special right translation.

Proof. Let f be any right identity element of S , let ρ be any right translation of S , and let $s \in S$. Then $s\rho = (sf)\rho = s(f\rho)$, whence ρ is the special right translation $\rho_{f\rho}$.

This theorem, Corollary 2 to Theorem 3.8, and left-right duality yield the

Corollary. If a semigroup S has a two-sided identity element, then the semigroups of right translations, special right translations, left translations, and special left translations all coincide and are isomorphic with S .

Theorem 3.10. A right translation ρ of a semigroup S carries a right identity element of S into a right identity element of S if and only if ρ is the identity mapping.

Proof. The sufficiency is obvious. To prove the necessity, let f be a right identity element of S , let $e = f\rho$, and let $s \in S$. By Theorem 3.9, $\rho = \rho_{f\rho} = \rho_e$, whence $s\rho = se = s$.

Theorem 3.11. If a right identity element f of a semigroup S lies in the image of S under a right translation ρ, and if a is any element of the inverse image of f under ρ, then ρ and ρ_a are one-to-one mappings of S onto itself and $\rho_a \rho$ is the identity mapping.

Proof. Let s $\in$ S. Then

$$s(\rho_a \rho) = (s\rho_a)\rho = (sa)\rho = s(a\rho) = sf = s ,$$

whence $\rho_a \rho$ is the identity mapping on S. Hence ρ_a and ρ must be one-to-one mappings of S onto S.

Corollary. If an element a of a semigroup S is mapped onto a right identity element of S by a right translation ρ, then the principal left ideal generated by a is S itself.

Proof. In the proof of the theorem we found that $(sa)\rho = s$ for every s $\in$ S, whence $(Sa)\rho = S$. But ρ was shown to be a one-to-one mapping of S onto itself, whence Sa $= S$.

Theorem 3.12. In order that every mapping of a semigroup S into itself be a right translation, it is necessary and sufficient that every element of S be a right zero element.

Proof of sufficiency. Let x , y $\in$ S; then by hypothesis x and y are right zero elements of S. Let ϕ be an arbitrary mapping of S into itself. Then $(xy)\phi = y\phi = x(y\phi)$ since $y\phi$ is a right zero element, and therefore ϕ is a right translation of S.

Proof of necessity. Suppose there is an element y $\in$ S which is not a right zero element of S. Then there is at least one element x $\in$ S such that xy $\neq$ y ; let x be any such element. Let ϕ be the constant mapping $S\phi = y$. By hypothesis, ϕ is a right translation, whence $y = (xy)\phi = x(y\phi) = xy \neq y$, which is a contradiction.

Comparison of this theorem (and its dual) with Theorem 2.1 yields the following

Corollary. In order that every mapping of a semigroup into itself be an endomorphism, it is necessary and sufficient that either every such mapping be a right translation or every such mapping be a left translation.

We now consider the question, referred to at the beginning of this section, which Clifford has raised concerning the permutability of left and right translations of semigroups. Clifford finds useful, in his theory of extensions of semigroups, a very weak cancellation law which he calls "Condition (A)": if $ax = bx$ and $xa = xb$ for all x in a semigroup, then $a = b$. He asks whether, in the presence of this condition, every left translation of the semigroup commutes with every right translation. We are able to report only that the answer is affirmative for translations of semigroups of orders two, three, and four. The semigroups of those orders which satisfy condition (A) are:

2.1, 2.2, 2.3

3.3, 3.5, 3.7, 3.8, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17

4.10, 4.11, 4.12, 4.13, 4.14, 4.15 4.16 4.17, 4.18,

4.19, 4.20, 4.21, 4.23, 4.24, 4.28, 4.37, 4.39, 4.42,

4.43, 4.44, 4.45, 4.47, 4.48, 4.49, 4.51, 4.57, 4.59,

4.60, 4.62, 4.63, 4.64, 4.65, 4.66, 4.67, 4.68, 4.69,

4.70, 4.72, 4.73, 4.74, 4.76, 4.81, 4 83, 4.84, 4.85,

4.87, 4.88, 4.89, 4.90, 4.91, 4.92, 4.93, 4.94, 4.95,

4.96, 4.97, 4.98, 4.99, 4.100, 4.101, 4.102, 4.103, 4.104,

4.106 4.107, 4.110, 4.111, 4.112, 4.113, 4.114, 4.115, 4.116,

4.117, 4.118, 4.119, 4.120

4. Semigroups of mappings of semigroups of orders two, three and four

In this section we list the semigroups of endomorphisms, of right translations, and of left translations, of semigroups of orders two, three, and four. Any semigroup of mappings of a semigroup of order k into itself is of course a subsemigroup of the transformation semigroup of degree k, and the multiplication table of the latter for k = 4 is given in full in this section. From this table the reader can easily construct the multiplication table of any semigroup of endomorphisms or of translations of a semigroup of order four, the elements of all such semigroups being listed herein.

The notation in our lists of endomorphisms and translations has been so chosen that the multiplication tables of semigroups of such transformations of semigroups of orders two and three can also be constructed from the table of the transformation semigroup of degree four. Any element of the latter may be regarded as a mapping of the set (1, 2, 3, 4) into itself, any mapping of degree three as a mapping of the set (1, 2, 3) into itself, and any mapping of degree two as a mapping of the set (1, 2) into itself. But we may (and do) also regard a mapping of degree three as a self-mapping of the set (1, 2, 3, 4) under which the element 4 is left fixed, and a mapping of degree two as a self-mapping of the set (1, 2, 3, 4) under which the elements 3 and 4 are each left fixed.

In each of the columns on the following three pages we list elements of the transformation semigroup of degree four, i.e., mappings of the set (1, 2, 3, 4) into itself. The name of the mapping (e.g., A_{18}) is followed by the elements (e.g., 3 4 2 1) into which the mapping carries the elements 1, 2, 3, 4, in that order.

A_{01} 1 2 3 4	B_{01} 1 2 2 4	B_{25} 4 1 4 2	B_{49} 4 4 1 3
A_{02} 1 3 2 4	B_{02} 1 2 1 4	B_{26} 4 2 4 1	B_{50} 4 4 3 1
A_{03} 2 1 3 4	B_{03} 1 1 2 4	B_{27} 1 2 4 1	B_{51} 4 1 4 3
A_{04} 2 3 1 4	B_{04} 2 2 1 4	B_{28} 1 4 2 1	B_{52} 4 3 4 1
A_{05} 3 1 2 4	B_{05} 2 1 1 4	Γ_{29} 2 1 4 2	B_{53} 1 4 1 3
A_{06} 3 2 1 4	B_{06} 2 1 2 4	B_{30} 2 4 1 2	B_{54} 3 4 3 1
A_{07} 1 2 4 3	B_{07} 1 3 3 4	B_{31} 4 1 2 4	B_{55} 1 1 4 3
A_{08} 1 4 2 3	B_{08} 1 1 3 4	B_{32} 4 2 1 4	B_{56} 3 3 4 1
A_{09} 1 3 4 2	B_{09} 1 3 1 4	B_{33} 4 1 1 2	B_{57} 1 3 4 1
A_{10} 1 4 3 2	B_{10} 3 1 3 4	B_{34} 4 2 2 1	B_{58} 1 4 3 1
A_{11} 2 1 4 3	B_{11} 3 1 1 4	B_{35} 1 4 4 2	B_{59} 3 1 4 3
A_{12} 2 4 1 3	B_{12} 3 3 1 4	B_{36} 2 4 4 1	B_{60} 3 4 1 3
A_{13} 2 3 4 1	B_{13} 3 2 3 4	B_{37} 2 1 4 1	B_{61} 4 1 3 4
A_{14} 2 4 3 1	B_{14} 2 2 3 4	B_{38} 4 1 2 1	B_{62} 4 3 1 4
A_{15} 3 1 4 2	B_{15} 3 2 2 4	B_{39} 1 2 4 2	B_{63} 4 1 1 3
A_{16} 3 4 1 2	B_{16} 2 3 2 4	B_{40} 4 2 1 2	B_{64} 4 3 3 1
A_{17} 3 2 4 1	B_{17} 2 3 3 4	B_{41} 1 4 2 4	B_{65} 1 4 4 3
A_{18} 3 4 2 1	B_{18} 3 3 2 4	B_{42} 2 4 1 4	B_{66} 3 4 4 1
A_{19} 4 1 2 3	B_{19} 1 1 4 2	B_{43} 2 4 1 1	B_{67} 3 1 4 1
A_{20} 4 1 3 2	B_{20} 2 2 4 1	B_{44} 4 2 1 1	B_{68} 4 1 3 1
A_{21} 4 2 1 3	B_{21} 4 4 1 2	B_{45} 1 4 2 2	B_{69} 1 3 4 3
A_{22} 4 3 1 2	B_{22} 4 4 2 1	B_{46} 4 1 2 2	B_{70} 4 3 1 3
A_{23} 4 2 3 1	B_{23} 1 4 1 2	B_{47} 1 2 4 4	B_{71} 1 4 3 4
A_{24} 4 3 2 1	B_{24} 2 4 2 1	B_{48} 2 1 4 4	B_{72} 3 4 1 4

B_{73} 3 4 1 1	B_{97} 3 2 4 2	B'_{22} 1 2 3 1	C_{01} 1 1 1 4
B_{74} 4 3 1 1	B_{98} 4 2 3 2	B'_{23} 1 3 2 1	C_{02} 2 2 2 4
B_{75} 1 4 3 3	B_{99} 2 3 4 3	B'_{24} 2 1 3 2	C_{03} 3 3 3 4
B_{76} 4 1 3 3	B'_{01} 4 3 2 3	B'_{25} 2 3 1 2	C_{04} 1 1 4 1
B_{77} 1 3 4 4	B'_{02} 2 4 3 4	B'_{26} 3 1 2 3	C_{05} 1 4 1 1
B_{78} 3 1 4 4	B'_{03} 3 4 2 4	B'_{27} 3 2 1 3	C_{06} 4 1 1 1
B_{79} 2 2 4 3	B'_{04} 3 4 2 2	B'_{28} 2 1 1 3	C_{07} 4 4 4 1
B_{80} 3 3 4 2	B'_{05} 4 3 2 2	B'_{29} 3 1 1 2	C_{08} 4 4 1 4
B_{81} 4 4 2 3	B'_{06} 2 4 3 3	B'_{30} 1 2 2 3	C_{09} 4 1 4 4
B_{82} 4 4 3 2	B'_{07} 4 2 3 3	B'_{31} 3 2 2 1	C_{10} 1 4 4 4
B_{83} 2 4 2 3	B'_{08} 2 3 4 4	B'_{32} 1 3 3 2	C_{11} 2 2 4 2
B_{84} 3 4 3 2	B'_{09} 3 2 4 4	B'_{33} 2 3 3 1	C_{12} 2 4 2 2
B_{85} 4 2 4 3	B'_{10} 1 1 2 3	B'_{34} 2 1 3 1	C_{13} 4 2 2 2
B_{86} 4 3 4 2	B'_{11} 1 1 3 2	B'_{35} 3 1 2 1	C_{14} 4 4 4 2
B_{87} 2 3 4 2	B'_{12} 2 2 1 3	B'_{36} 1 2 3 2	C_{15} 4 4 2 4
B_{88} 2 4 3 2	B'_{13} 2 2 3 1	B'_{37} 3 2 1 2	C_{16} 4 2 4 4
B_{89} 3 2 4 3	B'_{14} 3 3 1 2	B'_{38} 1 3 2 3	C_{17} 2 4 4 4
B_{90} 3 4 2 3	B'_{15} 3 3 2 1	B'_{39} 2 3 1 3	C_{18} 3 3 4 3
B_{91} 4 2 3 4	B'_{16} 1 2 1 3	B'_{40} 2 3 1 1	C_{19} 3 4 3 3
B_{92} 4 3 2 4	B'_{17} 1 3 1 2	B'_{41} 3 2 1 1	C_{20} 4 3 3 3
B_{93} 4 2 2 3	B'_{18} 2 1 2 3	B'_{42} 1 3 2 2	C_{21} 4 4 4 3
B_{94} 4 3 3 2	B'_{19} 2 3 2 1	B'_{43} 3 1 2 2	C_{22} 4 4 3 4
B_{95} 2 4 4 3	B'_{20} 3 1 3 2	B'_{44} 1 2 3 3	C_{23} 4 3 4 4
B_{96} 3 4 4 2	B'_{21} 3 2 3 1	B'_{45} 2 1 3 3	C_{24} 3 4 4 4

c_{25} 1 1 1 2	c_{41} 2 2 2 3	c_{57} 1 3 1 3	c_{73} 2 2 4 4
c_{26} 1 1 2 1	c_{42} 2 2 3 2	c_{58} 3 1 3 1	c_{74} 4 4 2 2
c_{27} 1 2 1 1	c_{43} 2 3 2 2	c_{59} 1 3 3 1	c_{75} 2 4 2 4
c_{28} 2 1 1 1	c_{44} 3 2 2 2	c_{60} 3 1 1 3	c_{76} 4 2 4 2
c_{29} 2 2 2 1	c_{45} 3 3 3 2	c_{61} 1 1 4 4	c_{77} 2 4 4 2
c_{30} 2 2 1 2	c_{46} 3 3 2 3	c_{62} 4 4 1 1	c_{78} 4 2 2 4
c_{31} 2 1 2 2	c_{47} 3 2 3 3	c_{63} 1 4 1 4	c_{79} 3 3 4 4
c_{32} 1 2 2 2	c_{48} 2 3 3 3	c_{64} 4 1 4 1	c_{80} 4 4 3 3
c_{33} 1 1 1 3	c_{49} 1 1 2 2	c_{65} 1 4 4 1	c_{81} 3 4 3 4
c_{34} 1 1 3 1	c_{50} 2 2 1 1	c_{66} 4 1 1 4	c_{82} 4 3 4 3
c_{35} 1 3 1 1	c_{51} 1 2 1 2	c_{67} 2 2 3 3	c_{83} 3 4 4 3
c_{36} 3 1 1 1	c_{52} 2 1 2 1	c_{68} 3 3 2 2	c_{84} 4 3 3 4
c_{37} 3 3 3 1	c_{53} 1 2 2 1	c_{69} 2 3 2 3	D_{01} 1 1 1 1
c_{38} 3 3 1 3	c_{54} 2 1 1 2	c_{70} 3 2 3 2	D_{02} 2 2 2 2
c_{39} 3 1 3 3	c_{55} 1 1 3 3	c_{71} 2 3 3 2	D_{03} 3 3 3 3
c_{40} 1 3 3 3	c_{56} 3 3 1 1	c_{72} 3 2 2 3	D_{04} 4 4 4 4

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	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
A_{01}	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
A_{02}	A_{02}	A_{01}	A_{04}	A_{03}	A_{06}	A_{05}	A_{08}	A_{01}	A_{10}	A_{09}	A_{12}	A_{11}	A_{14}	A_{13}	A_{16}	A_{15}
A_{03}	A_{03}	A_{05}	A_{01}	A_{06}	A_{02}	A_{04}	A_{11}	A_{19}	A_{15}	A_{20}	A_{07}	A_{21}	A_{17}	A_{23}	A_{09}	A_{22}
A_{04}	A_{04}	A_{06}	A_{02}	A_{05}	A_{01}	A_{03}	A_{12}	A_{21}	A_{16}	A_{22}	A_{08}	A_{19}	A_{18}	A_{24}	A_{10}	A_{20}
A_{05}	A_{05}	A_{03}	A_{06}	A_{01}	A_{04}	A_{02}	A_{19}	A_{11}	A_{20}	A_{15}	A_{21}	A_{07}	A_{23}	A_{17}	A_{22}	A_{09}
A_{06}	A_{06}	A_{04}	A_{05}	A_{02}	A_{03}	A_{01}	A_{21}	A_{12}	A_{22}	A_{16}	A_{19}	A_{08}	A_{24}	A_{18}	A_{20}	A_{10}
A_{07}	A_{07}	A_{09}	A_{11}	A_{13}	A_{15}	A_{17}	A_{01}	A_{10}	A_{02}	A_{08}	A_{03}	A_{14}	A_{04}	A_{12}	A_{05}	A_{18}
A_{08}	A_{08}	A_{10}	A_{12}	A_{14}	A_{16}	A_{18}	A_{02}	A_{09}	A_{01}	A_{07}	A_{04}	A_{13}	A_{03}	A_{11}	A_{06}	A_{17}
A_{09}	A_{09}	A_{07}	A_{13}	A_{11}	A_{17}	A_{15}	A_{10}	A_{01}	A_{08}	A_{02}	A_{14}	A_{03}	A_{12}	A_{04}	A_{18}	A_{05}
A_{10}	A_{10}	A_{08}	A_{14}	A_{12}	A_{18}	A_{16}	A_{09}	A_{02}	A_{07}	A_{01}	A_{13}	A_{04}	A_{11}	A_{03}	A_{17}	A_{06}
A_{11}	A_{11}	A_{15}	A_{07}	A_{17}	A_{09}	A_{13}	A_{03}	A_{20}	A_{05}	A_{19}	A_{01}	A_{23}	A_{06}	A_{21}	A_{02}	A_{24}
A_{12}	A_{12}	A_{16}	A_{08}	A_{18}	A_{10}	A_{14}	A_{04}	A_{22}	A_{06}	A_{21}	A_{02}	A_{24}	A_{05}	A_{19}	A_{01}	A_{23}
A_{13}	A_{13}	A_{17}	A_{09}	A_{15}	A_{07}	A_{11}	A_{14}	A_{23}	A_{18}	A_{24}	A_{10}	A_{20}	A_{16}	A_{22}	A_{08}	A_{19}
A_{14}	A_{14}	A_{18}	A_{10}	A_{16}	A_{08}	A_{12}	A_{13}	A_{24}	A_{17}	A_{23}	A_{09}	A_{22}	A_{15}	A_{20}	A_{07}	A_{21}
A_{15}	A_{15}	A_{11}	A_{17}	A_{07}	A_{13}	A_{09}	A_{20}	A_{03}	A_{19}	A_{05}	A_{23}	A_{01}	A_{21}	A_{06}	A_{24}	A_{02}
A_{16}	A_{16}	A_{12}	A_{18}	A_{08}	A_{14}	A_{10}	A_{22}	A_{04}	A_{21}	A_{06}	A_{24}	A_{02}	A_{19}	A_{05}	A_{23}	A_{01}
A_{17}	A_{17}	A_{13}	A_{15}	A_{09}	A_{11}	A_{07}	A_{23}	A_{14}	A_{24}	A_{18}	A_{20}	A_{10}	A_{22}	A_{16}	A_{19}	A_{08}
A_{18}	A_{18}	A_{14}	A_{16}	A_{10}	A_{12}	A_{08}	A_{24}	A_{13}	A_{23}	A_{17}	A_{22}	A_{09}	A_{20}	A_{15}	A_{21}	A_{07}
A_{19}	A_{19}	A_{20}	A_{21}	A_{23}	A_{22}	A_{24}	A_{05}	A_{15}	A_{03}	A_{11}	A_{06}	A_{17}	A_{01}	A_{07}	A_{04}	A_{13}
A_{20}	A_{20}	A_{19}	A_{23}	A_{21}	A_{24}	A_{22}	A_{15}	A_{05}	A_{11}	A_{03}	A_{17}	A_{06}	A_{07}	A_{01}	A_{13}	A_{04}
A_{21}	A_{21}	A_{22}	A_{19}	A_{24}	A_{20}	A_{23}	A_{06}	A_{16}	A_{04}	A_{12}	A_{05}	A_{18}	A_{02}	A_{08}	A_{03}	A_{14}
A_{22}	A_{22}	A_{21}	A_{24}	A_{19}	A_{23}	A_{20}	A_{16}	A_{06}	A_{12}	A_{04}	A_{18}	A_{05}	A_{08}	A_{02}	A_{14}	A_{03}
A_{23}	A_{23}	A_{24}	A_{20}	A_{22}	A_{19}	A_{21}	A_{17}	A_{18}	A_{13}	A_{14}	A_{15}	A_{16}	A_{09}	A_{10}	A_{11}	A_{12}
A_{24}	A_{24}	A_{23}	A_{22}	A_{20}	A_{21}	A_{19}	A_{18}	A_{17}	A_{14}	A_{13}	A_{16}	A_{15}	A_{10}	A_{09}	A_{12}	A_{11}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A17	A18	A19	A20	A21	A22	A23	A24	B01	B02	B03	B04	B05	B06	B07	B08
A01	A17	A18	A19	A20	A21	A22	A23	A24	B01	B02	B03	B04	B05	B06	B07	B08
A02	A18	A17	A21	A22	A19	A20	A24	A23	B01	B02	B02	B06	B05	B04	B07	B09
A03	A13	A24	A08	A10	A12	A16	A14	A18	B06	B05	B03	B04	B02	B01	B10	B08
A04	A14	A23	A07	A09	A11	A15	A13	A17	B04	B05	B02	B06	B03	B01	B12	B09
A05	A24	A13	A12	A16	A08	A10	A17	A14	B06	B03	B05	B01	B02	B04	B10	B11
A06	A23	A14	A11	A15	A07	A09	A18	A13	B04	B02	B05	B01	B03	B06	B12	B11
A07	A06	A16	A20	A19	A23	A24	A21	A22	B39	B27	B19	B20	B37	B29	B69	B55
A08	A05	A15	A22	A21	A24	A23	A19	A20	B45	B28	B23	B24	B43	B30	B75	B53
A09	A16	A06	A23	A24	A20	A19	A22	A21	B39	B19	B27	B29	B37	B20	B69	B57
A10	A15	A05	A24	A23	A22	A21	A20	A19	B45	B23	B28	B30	B43	B24	B75	B58
A11	A04	A22	A10	A08	A14	A18	A12	A16	B29	B37	B19	B20	B27	B39	B59	B55
A12	A03	A20	A09	A07	A13	A17	A11	A15	B30	B43	B23	B24	B28	B45	B60	B53
A13	A12	A21	A01	A02	A03	A05	A04	A06	B20	B37	B27	B29	B19	B39	B56	B57
A14	A11	A19	A02	A01	A04	A06	A03	A05	B24	B43	B28	B30	B23	B45	B54	B58
A15	A22	A04	A14	A18	A10	A08	A16	A12	B29	B19	B37	B39	B27	B20	B59	B67
A16	A20	A03	A13	A17	A09	A07	A15	A11	B30	B23	B43	B45	B28	B24	B60	B73
A17	A21	A12	A03	A05	A01	A02	A06	A04	B20	B27	B37	B39	B19	B29	B56	B67
A18	A19	A11	A04	A06	A02	A01	A05	A03	B24	B28	B43	B45	B23	B30	B54	B73
A19	A02	A09	A16	A12	A18	A14	A08	A10	B46	B38	B33	B34	B44	B40	B76	B63
A20	A09	A02	A18	A14	A16	A12	A10	A08	B46	B33	B38	B40	B44	B34	B76	B68
A21	A01	A10	A15	A11	A17	A13	A07	A09	B40	B44	B33	B34	B38	B46	B70	B63
A22	A10	A01	A17	A13	A15	A11	A09	A07	B40	B33	B44	B46	B38	B34	B70	B74
A23	A07	A08	A05	A03	A06	A04	A01	A02	B34	B44	B38	B40	B33	B46	B64	B68
A24	A08	A07	A06	A04	A05	A03	A02	A01	B34	B38	B44	B46	B33	B40	B64	B74

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
A01	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
A02	B08	B12	B11	B10	B18	B16	B15	B14	B17	B13	B23	B24	B25	B26	B19	B20
A03	B11	B07	B09	B12	B17	B14	B16	B15	B13	B18	B19	B20	B21	B22	B33	B34
A04	B11	B07	B08	B10	B17	B16	B14	B15	B18	B13	B23	B24	B25	B26	B33	B34
A05	B08	B12	B09	B07	B18	B15	B16	B14	B13	B17	B33	B34	B35	B36	B19	B20
A06	B09	B10	B08	B07	B17	B15	B14	B16	B18	B17	B33	B34	B35	B36	B23	B34
A07	B57	B59	B67	B56	B89	B79	B97	B87	B99	B80	B03	B04	B22	B21	B28	B30
A08	B58	B60	B73	B54	B90	B83	B04	B88	B06	B84	B02	B06	B26	B25	B27	B29
A09	B55	B56	B67	B59	B80	B87	B97	B79	B99	B89	B28	B30	B31	B32	B03	B04
A10	B53	B54	B73	B60	B84	B88	B04	B83	B06	B90	B27	B29	B32	B31	B02	B06
A11	B67	B69	B57	B56	B99	B79	B87	B97	B89	B80	B03	B04	B22	B21	B38	B40
A12	B73	B75	B58	B54	B06	B83	B88	B04	B90	B84	B02	B06	B26	B25	B44	B46
A13	B67	B69	B55	B59	B99	B87	B79	B97	B80	B89	B28	B30	B31	B32	B38	B40
A14	B73	B75	B53	B60	B06	B88	B83	B04	B84	B90	B27	B29	B32	B31	B44	B46
A15	B55	B56	B57	B69	B80	B97	B87	B79	B89	B99	B38	B40	B41	B42	B03	B04
A16	B53	B54	B58	B75	B84	B04	B88	B83	B90	B06	B44	B46	B47	B48	B02	B06
A17	B57	B59	B55	B69	B87	B97	B79	B87	B80	B99	B38	B40	B41	B42	B28	B30
A18	B58	B60	B53	B75	B90	B04	B83	B88	B84	B06	B44	B46	B47	B48	B27	B29
A19	B68	B70	B74	B64	B01	B93	B05	B98	B07	B94	B05	B01	B36	B35	B37	B39
A20	B63	B64	B74	B70	B94	B98	B05	B93	B07	B01	B37	B39	B42	B41	B05	B01
A21	B74	B76	B68	B64	B07	B93	B98	B05	B01	B94	B05	B01	B36	B35	B43	B45
A22	B63	B64	B68	B76	B94	B05	B98	B93	B01	B07	B43	B45	B48	B47	B05	B01
A23	B74	B76	B63	B70	B07	B98	B93	B05	B94	B01	B37	B39	B42	B41	B43	B45
A24	B68	B70	B63	B76	B01	B05	B93	B98	B94	B07	B43	B45	B48	B47	B37	B39

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
A01	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
A02	B21	B22	B28	B27	B30	B29	B32	B31	B33	B34	B35	B36	B43	B44	B45	B46
A03	B35	B36	B37	B38	B39	B40	B41	B42	B23	B24	B25	B26	B27	B28	B29	B30
A04	B35	B36	B43	B44	B45	B46	B47	B48	B19	B20	B21	B22	B28	B27	B30	B29
A05	B21	B22	B38	B37	B40	B39	B42	B41	B23	B24	B25	B26	B44	B43	B46	B45
A06	B25	B26	B44	B43	B46	B45	B48	B47	B19	B20	B21	B22	B38	B37	B40	B39
A07	B31	B32	B02	B23	B06	B24	B25	B26	B38	B40	B41	B42	B05	B33	B01	B34
A08	B32	B31	B03	B19	B04	B20	B21	B22	B44	B46	B47	B48	B05	B33	B01	B34
A09	B22	B21	B23	B02	B24	B06	B26	B25	B38	B40	B41	B42	B43	B44	B45	B46
A10	B26	B25	B19	B03	B20	B04	B22	B21	B44	B46	B47	B48	B37	B38	B39	B40
A11	B41	B42	B05	B33	B01	B34	B35	B36	B28	B30	B31	B32	B02	B23	B06	B24
A12	B47	B48	B05	B33	B01	B34	B35	B36	B27	B29	B32	B31	B03	B19	B04	B20
A13	B41	B42	B43	B44	B45	B46	B47	B48	B03	B04	B22	B21	B23	B02	B24	B06
A14	B47	B48	B37	B38	B39	B40	B41	B42	B02	B06	B26	B25	B19	B03	B20	B04
A15	B22	B21	B33	B05	B34	B01	B36	B35	B28	B30	B31	B32	B44	B43	B46	B45
A16	B26	B25	B33	B05	B34	B01	B36	B35	B27	B29	B32	B31	B38	B37	B40	B39
A17	B31	B32	B44	B43	B46	B45	B48	B47	B03	B04	B22	B21	B33	B05	B34	B01
A18	B32	B31	B38	B37	B40	B39	B42	B41	B02	B06	B26	B25	B33	B05	B34	B01
A19	B42	B41	B03	B19	B04	B20	B21	B22	B43	B45	B48	B47	B02	B23	B06	B24
A20	B36	B35	B19	B03	B20	B04	B22	B21	B43	B45	B48	B47	B27	B28	B29	B30
A21	B48	B47	B02	B23	B06	B24	B25	B26	B37	B39	B42	B41	B03	B19	B04	B20
A22	B36	B35	B23	B02	B24	B06	B26	B25	B37	B39	B42	B41	B28	B27	B30	B29
A23	B48	B47	B27	B28	B29	B30	B31	B32	B05	B01	B36	B35	B19	B03	B20	B04
A24	B42	B41	B28	B27	B30	B29	B32	B31	B05	B01	B36	B35	B23	B02	B24	B06

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
A_{01}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
A_{02}	B_{47}	B_{48}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	B_{51}	B_{52}	B_{49}	B_{50}	B_{55}	B_{56}	B_{53}	B_{54}
A_{03}	B_{31}	B_{32}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	B_{49}	B_{50}	B_{65}	B_{66}	B_{63}	B_{64}	B_{55}	B_{56}
A_{04}	B_{32}	B_{31}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	B_{51}	B_{52}	B_{65}	B_{66}	B_{63}	B_{64}	B_{53}	B_{54}
A_{05}	B_{48}	B_{47}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{65}	B_{66}	B_{49}	B_{50}	B_{55}	B_{56}	B_{63}	B_{64}
A_{06}	B_{42}	B_{41}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	B_{65}	B_{66}	B_{51}	B_{52}	B_{53}	B_{54}	B_{63}	B_{64}
A_{07}	B_{35}	B_{36}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{50}	B_{49}	B_{61}	B_{62}	B_{58}	B_{60}	B_{08}	B_{12}
A_{08}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	B_{52}	B_{51}	B_{62}	B_{61}	B_{57}	B_{59}	B_{09}	B_{10}
A_{09}	B_{47}	B_{48}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	B_{61}	B_{62}	B_{50}	B_{49}	B_{08}	B_{12}	B_{58}	B_{60}
A_{10}	B_{41}	B_{42}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	B_{62}	B_{61}	B_{52}	B_{51}	B_{09}	B_{10}	B_{57}	B_{59}
A_{11}	B_{25}	B_{26}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	B_{50}	B_{49}	B_{71}	B_{72}	B_{68}	B_{70}	B_{08}	B_{12}
A_{12}	B_{21}	B_{22}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	B_{52}	B_{51}	B_{77}	B_{78}	B_{74}	B_{76}	B_{09}	B_{10}
A_{13}	B_{26}	B_{25}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	B_{61}	B_{62}	B_{71}	B_{72}	B_{68}	B_{70}	B_{58}	B_{60}
A_{14}	B_{22}	B_{21}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	B_{62}	B_{61}	B_{77}	B_{78}	B_{74}	B_{76}	B_{57}	B_{59}
A_{15}	B_{48}	B_{47}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	B_{71}	B_{72}	B_{50}	B_{49}	B_{08}	B_{12}	B_{68}	B_{70}
A_{16}	B_{42}	B_{41}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	B_{77}	B_{78}	B_{52}	B_{51}	B_{09}	B_{10}	B_{74}	B_{76}
A_{17}	B_{36}	B_{35}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	B_{71}	B_{72}	B_{61}	B_{62}	B_{58}	B_{60}	B_{68}	B_{70}
A_{18}	B_{36}	B_{35}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	B_{77}	B_{78}	B_{62}	B_{61}	B_{57}	B_{59}	B_{74}	B_{76}
A_{19}	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{66}	B_{65}	B_{72}	B_{71}	B_{67}	B_{69}	B_{11}	B_{07}
A_{20}	B_{31}	B_{32}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	B_{72}	B_{71}	B_{66}	B_{65}	B_{11}	B_{07}	B_{67}	B_{69}
A_{21}	B_{21}	B_{22}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	B_{66}	B_{65}	B_{78}	B_{77}	B_{73}	B_{75}	B_{11}	B_{07}
A_{22}	B_{32}	B_{31}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	B_{78}	B_{77}	B_{66}	B_{65}	B_{11}	B_{07}	B_{73}	B_{75}
A_{23}	B_{22}	B_{21}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	B_{72}	B_{71}	B_{78}	B_{77}	B_{73}	B_{75}	B_{67}	B_{69}
A_{24}	B_{26}	B_{25}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	B_{78}	B_{77}	B_{72}	B_{71}	B_{67}	B_{69}	B_{73}	B_{75}

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THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
A_{01}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
A_{02}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	B_{63}	B_{64}	B_{65}	B_{66}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}
A_{03}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	B_{53}	B_{54}	B_{51}	B_{52}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}
A_{04}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{55}	B_{56}	B_{49}	B_{50}	B_{58}	B_{57}	P_{60}	P_{59}	P_{62}	B_{61}
A_{05}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	B_{53}	B_{54}	B_{51}	B_{52}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}
A_{06}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	B_{55}	B_{56}	B_{49}	B_{50}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}
A_{07}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	B_{68}	B_{70}	B_{71}	B_{72}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}
A_{08}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	B_{74}	B_{75}	B_{77}	B_{78}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}
A_{09}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	B_{68}	B_{70}	B_{71}	B_{72}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}
A_{10}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	B_{74}	B_{76}	B_{77}	B_{78}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
A_{11}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	B_{58}	B_{60}	B_{61}	B_{62}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}
A_{12}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	B_{57}	B_{59}	B_{62}	B_{61}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}
A_{13}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{08}	B_{12}	B_{50}	B_{49}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}
A_{14}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	B_{09}	B_{10}	B_{52}	B_{51}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}
A_{15}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	B_{58}	B_{60}	B_{61}	B_{62}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}
A_{16}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	B_{57}	B_{59}	B_{62}	B_{61}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}
A_{17}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	B_{08}	B_{12}	B_{50}	B_{49}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}
A_{18}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	B_{09}	B_{10}	B_{52}	B_{51}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}
A_{19}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	B_{73}	B_{75}	B_{78}	B_{77}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}
A_{20}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	B_{73}	B_{75}	B_{78}	B_{77}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}
A_{21}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	B_{67}	B_{69}	B_{72}	B_{71}	B_{78}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}
A_{22}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	B_{67}	B_{69}	B_{72}	B_{71}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}
A_{23}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{11}	B_{07}	B_{66}	B_{65}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}
A_{24}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	B_{11}	B_{07}	B_{66}	B_{65}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
A_{01}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
A_{02}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	B_{83}	B_{84}	B_{85}	B_{86}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{87}
A_{03}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	B_{79}	B_{80}	B_{81}	B_{82}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}
A_{04}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	B_{83}	B_{84}	B_{85}	B_{86}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B'_{05}
A_{05}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{93}	B_{94}	B_{95}	B_{96}	B_{79}	B_{80}	B_{81}	B_{82}	B_{98}	B_{97}
A_{06}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	B_{93}	B_{94}	B_{95}	B_{96}	B_{83}	B_{84}	B_{85}	B_{86}	B'_{05}	B'_{04}
A_{07}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{14}	B_{18}	B_{82}	B_{81}	B_{88}	B_{90}	B_{91}	B_{92}	B_{16}	B_{83}
A_{08}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	B_{16}	B_{13}	B_{86}	B_{85}	B_{87}	B_{89}	B_{92}	B_{91}	B_{14}	B_{79}
A_{09}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	B_{88}	B_{90}	B_{91}	B_{92}	B_{14}	B_{18}	B_{82}	B_{81}	B_{83}	B_{16}
A_{10}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	B_{87}	B_{89}	B_{92}	B_{91}	B_{16}	B_{13}	B_{86}	B_{85}	B_{79}	B_{14}
A_{11}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	B_{14}	B_{18}	B_{82}	B_{81}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B_{15}	B_{93}
A_{12}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	B_{16}	B_{13}	B_{86}	B_{85}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{15}	B_{93}
A_{13}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	B_{88}	B_{90}	B_{91}	B_{92}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
A_{14}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	B_{87}	B_{89}	B_{92}	B_{91}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{97}	B_{98}
A_{15}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B_{14}	B_{18}	B_{82}	B_{81}	B_{93}	B_{15}
A_{16}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{87}	B_{13}	B_{86}	B_{85}	B_{93}	B_{15}
A_{17}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B_{88}	B_{90}	B_{91}	B_{92}	B'_{05}	B'_{04}
A_{18}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{87}	B_{89}	B_{92}	B_{91}	B_{98}	B_{97}
A_{19}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{15}	B_{17}	B_{96}	B_{95}	B_{97}	B_{99}	B'_{03}	B'_{02}	B_{14}	B_{79}
A_{20}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	B_{15}	B_{99}	B'_{03}	B'_{02}	B_{15}	B_{17}	B_{96}	B_{95}	B_{79}	B_{14}
A_{21}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	B_{15}	B_{17}	B_{96}	B_{95}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{16}	B_{83}
A_{22}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{15}	B_{17}	B_{96}	B_{95}	B_{83}	B_{16}
A_{23}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	B_{97}	B_{99}	B'_{03}	B'_{02}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{87}	B_{88}
A_{24}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{97}	B_{99}	B'_{03}	B'_{02}	B_{88}	B_{87}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
A_{01}	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
A_{02}	B_{90}	B_{89}	B_{92}	B_{91}	B_{93}	B_{94}	B_{95}	B_{96}	B'_{04}	B'_{05}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B_{97}	B_{98}
A_{03}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B_{93}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}	B_{89}	B_{90}	B_{91}	B_{92}	B'_{05}	B'_{04}
A_{04}	B'_{05}	B'_{06}	B'_{08}	B'_{09}	B_{79}	B_{80}	B_{81}	B_{82}	B_{88}	B_{87}	B_{90}	B_{89}	B_{92}	B_{91}	B_{98}	B_{97}
A_{05}	B'_{01}	B_{99}	B'_{03}	B'_{02}	B_{83}	B_{84}	B_{85}	B_{86}	B'_{05}	B'_{04}	B'_{02}	B'_{06}	B'_{09}	B'_{08}	B_{87}	B_{88}
A_{06}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	B_{79}	B_{80}	B_{81}	B_{82}	B_{98}	B_{97}	B'_{01}	B_{99}	B'_{03}	B'_{02}	B_{88}	B_{87}
A_{07}	B_{13}	B_{84}	B_{85}	B_{86}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B_{15}	B_{93}	B_{17}	B_{94}	B_{95}	B_{96}	B'_{04}	B'_{05}
A_{08}	B_{18}	B_{80}	B_{81}	B_{82}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{15}	B_{93}	B_{17}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}
A_{09}	B_{84}	B_{13}	B_{86}	B_{85}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B_{15}	B_{93}
A_{10}	B_{80}	B_{18}	B_{82}	B_{81}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B_{15}	B_{93}
A_{11}	B_{17}	B_{94}	B_{95}	B_{96}	B_{88}	B_{90}	B_{91}	B_{92}	B_{16}	B_{83}	B_{13}	B_{84}	B_{85}	B_{86}	B'_{05}	B'_{04}
A_{12}	B_{17}	B_{94}	B_{95}	B_{96}	B_{87}	B_{89}	B_{92}	B_{91}	B_{14}	B_{79}	B_{18}	B_{80}	B_{81}	B_{82}	B_{98}	B_{97}
A_{13}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B_{14}	B_{18}	B_{82}	B_{81}	B_{83}	B_{16}	B_{84}	B_{13}	B_{86}	B_{85}	B_{93}	B_{15}
A_{14}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B_{16}	B_{13}	B_{86}	B_{85}	B_{79}	B_{14}	B_{80}	B_{18}	B_{82}	B_{81}	B_{93}	B_{15}
A_{15}	B_{94}	B_{17}	B_{96}	B_{95}	B_{88}	B_{90}	B_{91}	B_{92}	B'_{05}	B'_{04}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	B_{16}	B_{83}
A_{16}	B_{94}	B_{17}	B_{96}	B_{95}	B_{87}	B_{89}	B_{92}	B_{91}	B_{98}	B_{97}	B'_{01}	B_{99}	B'_{03}	B'_{02}	B_{14}	B_{79}
A_{17}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	B_{14}	B_{18}	B_{82}	B_{81}	B_{93}	B_{15}	B_{94}	B_{17}	B_{96}	B_{95}	B_{83}	B_{16}
A_{18}	B'_{01}	B_{99}	B'_{03}	B'_{02}	B_{16}	B_{13}	B_{86}	B_{85}	B_{93}	B_{15}	B_{94}	B_{17}	B_{96}	B_{95}	B_{79}	B_{14}
A_{19}	B_{18}	B_{80}	B_{81}	B_{82}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{16}	B_{83}	B_{13}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
A_{20}	B_{80}	B_{18}	B_{82}	B_{81}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B_{86}	B_{88}	B_{89}	B_{90}	B_{91}	B_{92}	B_{16}	B_{83}
A_{21}	B_{13}	B_{84}	B_{85}	B_{86}	B_{97}	B_{99}	B'_{03}	B'_{02}	B_{14}	B_{79}	B_{18}	B_{80}	B_{81}	B_{82}	B_{88}	B_{87}
A_{22}	B_{84}	B_{13}	B_{86}	B_{85}	B_{97}	B_{99}	B'_{03}	B'_{02}	B_{88}	B_{87}	B_{90}	B_{89}	B_{92}	B_{93}	B_{14}	B_{79}
A_{23}	B_{89}	B_{90}	B_{91}	B_{92}	B_{15}	B_{17}	B_{96}	B_{95}	B_{79}	B_{14}	B_{80}	B_{18}	B_{82}	B_{81}	B_{83}	B_{16}
A_{24}	B_{90}	B_{89}	B_{92}	B_{91}	B_{15}	B_{17}	B_{96}	B_{95}	B_{83}	B_{16}	B_{84}	B_{13}	B_{86}	B_{85}	B_{79}	B_{14}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{06}	B_{07}	B_{08}	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}
A_{01}	B_{06}	B_{07}	B_{08}	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}
A_{02}	B_{99}	B_{01}	B_{02}	B_{03}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}
A_{03}	B_{07}	B_{06}	B_{09}	B_{08}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}
A_{04}	B_{01}	B_{99}	B_{03}	B_{02}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}
A_{05}	B_{89}	B_{90}	B_{91}	B_{92}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}
A_{06}	B_{90}	B_{89}	B_{92}	B_{91}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}
A_{07}	B_{06}	B_{07}	B_{08}	B_{09}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}
A_{08}	B_{99}	B_{01}	B_{02}	B_{03}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}
A_{09}	B_{16}	B_{94}	B_{95}	B_{96}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}
A_{10}	B_{17}	B_{94}	B_{95}	B_{96}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}
A_{11}	B_{07}	B_{06}	B_{09}	B_{08}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}
A_{12}	B_{01}	B_{91}	B_{03}	B_{02}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}
A_{13}	B_{94}	B_{17}	B_{96}	B_{95}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}
A_{14}	B_{94}	B_{17}	B_{96}	B_{95}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}
A_{15}	B_{13}	B_{84}	B_{85}	B_{86}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}
A_{16}	B_{18}	B_{80}	B_{81}	B_{82}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}
A_{17}	B_{84}	B_{13}	B_{86}	B_{85}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}
A_{18}	B_{80}	B_{18}	B_{82}	B_{81}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}
A_{19}	B_{89}	B_{90}	B_{91}	B_{92}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}
A_{20}	B_{13}	B_{84}	B_{85}	B_{86}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}
A_{21}	B_{90}	B_{89}	B_{92}	B_{93}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}
A_{22}	B_{18}	B_{80}	B_{81}	B_{82}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}
A_{23}	B_{84}	B_{13}	B_{86}	B_{85}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}
A_{24}	B_{80}	B_{18}	B_{82}	B_{81}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}
A_{01}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}
A_{02}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{41}	B^0_{26}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}
A_{03}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}
A_{04}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}
A_{05}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}
A_{06}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}
A_{07}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}
A_{08}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}
A_{09}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}
A_{10}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}
A_{11}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}
A_{12}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{27}	B^0_{26}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}
A_{13}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}
A_{14}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}
A_{15}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}
A_{16}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{27}	B^0_{26}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}
A_{17}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}
A_{18}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}
A_{19}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}
A_{20}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}
A_{21}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}
A_{22}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}
A_{23}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}
A_{24}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{27}	B^0_{26}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B^0_{38}	B^0_{39}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
A_{01}	B^0_{38}	B^0_{39}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
A_{02}	B^0_{44}	B^0_{45}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	C_{01}	C_{02}	C_{03}	C_{05}	C_{04}	C_{06}	C_{07}	C_{09}
A_{03}	B^0_{26}	B^0_{27}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	C_{01}	C_{02}	C_{03}	C_{04}	C_{06}	C_{05}	C_{07}	C_{08}
A_{04}	B^0_{27}	B^0_{26}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	C_{01}	C_{02}	C_{03}	C_{05}	C_{06}	C_{04}	C_{07}	C_{09}
A_{05}	B^0_{45}	B^0_{44}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	C_{01}	C_{02}	C_{03}	C_{06}	C_{04}	C_{05}	C_{07}	C_{10}
A_{06}	B^0_{39}	B^0_{38}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{27}	B^0_{26}	C_{01}	C_{02}	C_{03}	C_{06}	C_{05}	C_{04}	C_{07}	C_{10}
A_{07}	B^0_{32}	B^0_{33}	B^0_{40}	B^0_{41}	B^0_{42}	B^0_{43}	B^0_{44}	B^0_{45}	C_{04}	C_{11}	C_{18}	C_{01}	C_{05}	C_{06}	C_{08}	C_{07}
A_{08}	B^0_{32}	B^0_{33}	B^0_{34}	B^0_{35}	B^0_{36}	B^0_{37}	B^0_{38}	B^0_{39}	C_{05}	C_{12}	C_{19}	C_{01}	C_{04}	C_{06}	C_{09}	C_{07}
A_{09}	B^0_{44}	B^0_{45}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	C_{04}	C_{11}	C_{18}	C_{05}	C_{01}	C_{06}	C_{08}	C_{09}
A_{10}	B^0_{38}	B^0_{39}	B^0_{28}	B^0_{29}	B^0_{30}	B^0_{31}	B^0_{32}	B^0_{33}	C_{05}	C_{12}	C_{19}	C_{04}	C_{01}	C_{06}	C_{09}	C_{08}
A_{11}	B^0_{20}	B^0_{21}	B^0_{41}	B^0_{40}	B^0_{43}	B^0_{42}	B^0_{45}	B^0_{44}	C_{04}	C_{11}	C_{18}	C_{01}	C_{06}	C_{05}	C_{08}	C_{07}
A_{12}	B^0_{14}	B^0_{15}	B^0_{35}	B^0_{34}	B^0_{37}	B^0_{36}	B^0_{39}	B^0_{38}	C_{05}	C_{12}	C_{19}	C_{01}	C_{06}	C_{04}	C_{09}	C_{07}
A_{13}	B^0_{21}	B^0_{20}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	C_{04}	C_{11}	C_{18}	C_{05}	C_{06}	C_{01}	C_{08}	C_{09}
A_{14}	B^0_{15}	B^0_{14}	B^0_{29}	B^0_{28}	B^0_{31}	B^0_{30}	B^0_{33}	B^0_{32}	C_{05}	C_{12}	C_{19}	C_{04}	C_{06}	C_{01}	C_{09}	C_{08}
A_{15}	B^0_{45}	B^0_{44}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	C_{04}	C_{11}	C_{18}	C_{06}	C_{01}	C_{05}	C_{08}	C_{10}
A_{16}	B^0_{39}	B^0_{38}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	C_{05}	C_{12}	C_{19}	C_{06}	C_{01}	C_{04}	C_{09}	C_{10}
A_{17}	B^0_{33}	B^0_{32}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	C_{04}	C_{11}	C_{18}	C_{06}	C_{05}	C_{01}	C_{08}	C_{10}
A_{18}	B^0_{33}	B^0_{32}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	C_{05}	C_{12}	C_{19}	C_{06}	C_{04}	C_{01}	C_{09}	C_{10}
A_{19}	B^0_{20}	B^0_{21}	B^0_{22}	B^0_{23}	B^0_{24}	B^0_{25}	B^0_{26}	B^0_{27}	C_{06}	C_{13}	C_{20}	C_{01}	C_{04}	C_{05}	C_{10}	C_{07}
A_{20}	B^0_{26}	B^0_{27}	B^0_{16}	B^0_{17}	B^0_{18}	B^0_{19}	B^0_{20}	B^0_{21}	C_{06}	C_{13}	C_{20}	C_{04}	C_{01}	C_{05}	C_{10}	C_{08}
A_{21}	B^0_{14}	B^0_{15}	B^0_{23}	B^0_{22}	B^0_{25}	B^0_{24}	B^0_{27}	B^0_{26}	C_{06}	C_{13}	C_{20}	C_{01}	C_{05}	C_{04}	C_{10}	C_{07}
A_{22}	B^0_{27}	B^0_{26}	B^0_{10}	B^0_{11}	B^0_{12}	B^0_{13}	B^0_{14}	B^0_{15}	C_{06}	C_{13}	C_{20}	C_{05}	C_{01}	C_{04}	C_{10}	C_{09}
A_{23}	B^0_{15}	B^0_{14}	B^0_{17}	B^0_{16}	B^0_{19}	B^0_{18}	B^0_{21}	B^0_{20}	C_{06}	C_{13}	C_{20}	C_{04}	C_{05}	C_{01}	C_{10}	C_{08}
A_{24}	B^0_{21}	B^0_{20}	B^0_{11}	B^0_{10}	B^0_{13}	B^0_{12}	B^0_{15}	B^0_{14}	C_{06}	C_{13}	C_{20}	C_{05}	C_{04}	C_{01}	C_{10}	C_{09}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
A_{01}	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
A_{02}	C_{08}	C_{10}	C_{12}	C_{11}	C_{13}	C_{14}	C_{16}	C_{15}	C_{17}	C_{19}	C_{18}	C_{20}	C_{21}	C_{23}	C_{22}	C_{24}
A_{03}	C_{10}	C_{09}	C_{11}	C_{13}	C_{12}	C_{14}	C_{15}	C_{17}	C_{16}	C_{18}	C_{20}	C_{19}	C_{21}	C_{22}	C_{24}	C_{23}
A_{04}	C_{10}	C_{08}	C_{12}	C_{13}	C_{11}	C_{14}	C_{16}	C_{17}	C_{15}	C_{19}	C_{20}	C_{18}	C_{21}	C_{23}	C_{24}	C_{22}
A_{05}	C_{08}	C_{09}	C_{13}	C_{11}	C_{12}	C_{14}	C_{17}	C_{15}	C_{16}	C_{20}	C_{18}	C_{19}	C_{21}	C_{24}	C_{22}	C_{23}
A_{06}	C_{09}	C_{08}	C_{13}	C_{12}	C_{11}	C_{14}	C_{17}	C_{16}	C_{15}	C_{20}	C_{19}	C_{18}	C_{21}	C_{24}	C_{23}	C_{22}
A_{07}	C_{09}	C_{10}	C_{02}	C_{12}	C_{13}	C_{15}	C_{14}	C_{16}	C_{17}	C_{03}	C_{19}	C_{20}	C_{22}	C_{21}	C_{23}	C_{24}
A_{08}	C_{08}	C_{10}	C_{02}	C_{11}	C_{13}	C_{16}	C_{14}	C_{15}	C_{17}	C_{03}	C_{18}	C_{20}	C_{23}	C_{21}	C_{22}	C_{24}
A_{09}	C_{07}	C_{10}	C_{12}	C_{02}	C_{13}	C_{15}	C_{16}	C_{14}	C_{17}	C_{19}	C_{03}	C_{20}	C_{22}	C_{23}	C_{21}	C_{24}
A_{10}	C_{07}	C_{10}	C_{11}	C_{02}	C_{13}	C_{16}	C_{15}	C_{14}	C_{17}	C_{18}	C_{03}	C_{20}	C_{23}	C_{22}	C_{21}	C_{24}
A_{11}	C_{10}	C_{09}	C_{02}	C_{13}	C_{12}	C_{15}	C_{14}	C_{17}	C_{16}	C_{03}	C_{20}	C_{19}	C_{22}	C_{21}	C_{24}	C_{23}
A_{12}	C_{10}	C_{08}	C_{02}	C_{13}	C_{11}	C_{16}	C_{14}	C_{17}	C_{15}	C_{03}	C_{20}	C_{18}	C_{23}	C_{21}	C_{24}	C_{22}
A_{13}	C_{10}	C_{07}	C_{12}	C_{13}	C_{02}	C_{15}	C_{16}	C_{17}	C_{14}	C_{19}	C_{20}	C_{03}	C_{22}	C_{23}	C_{24}	C_{21}
A_{14}	C_{10}	C_{07}	C_{11}	C_{13}	C_{02}	C_{16}	C_{15}	C_{17}	C_{14}	C_{18}	C_{20}	C_{03}	C_{23}	C_{22}	C_{24}	C_{21}
A_{15}	C_{07}	C_{09}	C_{13}	C_{02}	C_{12}	C_{15}	C_{17}	C_{14}	C_{16}	C_{20}	C_{03}	C_{19}	C_{22}	C_{24}	C_{21}	C_{23}
A_{16}	C_{07}	C_{08}	C_{13}	C_{02}	C_{11}	C_{16}	C_{17}	C_{14}	C_{15}	C_{20}	C_{03}	C_{18}	C_{23}	C_{24}	C_{21}	C_{22}
A_{17}	C_{09}	C_{07}	C_{13}	C_{12}	C_{02}	C_{15}	C_{17}	C_{16}	C_{14}	C_{20}	C_{19}	C_{03}	C_{22}	C_{24}	C_{23}	C_{21}
A_{18}	C_{08}	C_{07}	C_{13}	C_{11}	C_{02}	C_{16}	C_{17}	C_{15}	C_{14}	C_{20}	C_{18}	C_{03}	C_{23}	C_{24}	C_{22}	C_{21}
A_{19}	C_{08}	C_{09}	C_{02}	C_{11}	C_{12}	C_{17}	C_{14}	C_{15}	C_{16}	C_{03}	C_{18}	C_{19}	C_{24}	C_{21}	C_{22}	C_{23}
A_{20}	C_{07}	C_{09}	C_{11}	C_{02}	C_{12}	C_{17}	C_{15}	C_{14}	C_{16}	C_{18}	C_{03}	C_{19}	C_{24}	C_{22}	C_{21}	C_{23}
A_{21}	C_{09}	C_{08}	C_{02}	C_{12}	C_{11}	C_{17}	C_{14}	C_{16}	C_{15}	C_{03}	C_{19}	C_{18}	C_{24}	C_{21}	C_{23}	C_{22}
A_{22}	C_{07}	C_{08}	C_{12}	C_{02}	C_{11}	C_{17}	C_{16}	C_{14}	C_{15}	C_{19}	C_{03}	C_{18}	C_{24}	C_{23}	C_{21}	C_{22}
A_{23}	C_{09}	C_{07}	C_{11}	C_{12}	C_{02}	C_{17}	C_{15}	C_{16}	C_{14}	C_{18}	C_{19}	C_{03}	C_{24}	C_{22}	C_{23}	C_{21}
A_{24}	C_{08}	C_{07}	C_{12}	C_{11}	C_{02}	C_{17}	C_{16}	C_{15}	C_{14}	C_{19}	C_{18}	C_{03}	C_{24}	C_{23}	C_{22}	C_{21}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{25}	c_{26}	c_{27}	c_{28}	c_{29}	c_{30}	c_{31}	c_{32}	c_{33}	c_{34}	c_{35}	c_{36}	c_{37}	c_{38}	c_{39}	c_{40}
A_{01}	c_{25}	c_{26}	c_{27}	c_{28}	c_{29}	c_{30}	c_{31}	c_{32}	c_{33}	c_{34}	c_{35}	c_{36}	c_{37}	c_{38}	c_{39}	c_{40}
A_{02}	c_{25}	c_{27}	c_{26}	c_{28}	c_{29}	c_{31}	c_{30}	c_{32}	c_{33}	c_{35}	c_{34}	c_{36}	c_{37}	c_{39}	c_{38}	c_{40}
A_{03}	c_{25}	c_{26}	c_{28}	c_{27}	c_{29}	c_{30}	c_{32}	c_{31}	c_{33}	c_{34}	c_{36}	c_{35}	c_{37}	c_{38}	c_{40}	c_{39}
A_{04}	c_{25}	c_{27}	c_{28}	c_{26}	c_{29}	c_{31}	c_{32}	c_{30}	c_{33}	c_{35}	c_{36}	c_{34}	c_{37}	c_{39}	c_{40}	c_{38}
A_{05}	c_{25}	c_{28}	c_{26}	c_{27}	c_{29}	c_{32}	c_{30}	c_{31}	c_{33}	c_{36}	c_{34}	c_{35}	c_{37}	c_{40}	c_{38}	c_{39}
A_{06}	c_{25}	c_{28}	c_{27}	c_{26}	c_{29}	c_{32}	c_{31}	c_{30}	c_{33}	c_{36}	c_{35}	c_{34}	c_{37}	c_{40}	c_{39}	c_{38}
A_{07}	c_{26}	c_{25}	c_{27}	c_{28}	c_{30}	c_{29}	c_{31}	c_{32}	c_{34}	c_{33}	c_{35}	c_{36}	c_{38}	c_{37}	c_{39}	c_{40}
A_{08}	c_{27}	c_{25}	c_{26}	c_{28}	c_{31}	c_{29}	c_{30}	c_{32}	c_{35}	c_{33}	c_{34}	c_{36}	c_{39}	c_{37}	c_{38}	c_{40}
A_{09}	c_{26}	c_{27}	c_{25}	c_{28}	c_{30}	c_{31}	c_{29}	c_{32}	c_{34}	c_{35}	c_{33}	c_{36}	c_{38}	c_{39}	c_{37}	c_{40}
A_{10}	c_{27}	c_{26}	c_{25}	c_{28}	c_{31}	c_{30}	c_{29}	c_{32}	c_{35}	c_{34}	c_{33}	c_{36}	c_{39}	c_{38}	c_{37}	c_{40}
A_{11}	c_{26}	c_{25}	c_{28}	c_{27}	c_{30}	c_{29}	c_{32}	c_{31}	c_{34}	c_{33}	c_{36}	c_{35}	c_{38}	c_{37}	c_{40}	c_{39}
A_{12}	c_{27}	c_{25}	c_{28}	c_{26}	c_{31}	c_{29}	c_{32}	c_{30}	c_{35}	c_{33}	c_{36}	c_{34}	c_{39}	c_{37}	c_{40}	c_{38}
A_{13}	c_{26}	c_{27}	c_{28}	c_{25}	c_{30}	c_{31}	c_{32}	c_{29}	c_{34}	c_{35}	c_{36}	c_{33}	c_{38}	c_{39}	c_{40}	c_{37}
A_{14}	c_{27}	c_{26}	c_{28}	c_{25}	c_{31}	c_{30}	c_{32}	c_{29}	c_{35}	c_{34}	c_{36}	c_{33}	c_{39}	c_{38}	c_{40}	c_{37}
A_{15}	c_{26}	c_{28}	c_{25}	c_{27}	c_{30}	c_{32}	c_{29}	c_{31}	c_{34}	c_{36}	c_{33}	c_{35}	c_{38}	c_{40}	c_{37}	c_{39}
A_{16}	c_{27}	c_{28}	c_{25}	c_{26}	c_{31}	c_{32}	c_{29}	c_{30}	c_{35}	c_{36}	c_{33}	c_{34}	c_{39}	c_{40}	c_{37}	c_{38}
A_{17}	c_{26}	c_{28}	c_{27}	c_{25}	c_{30}	c_{32}	c_{31}	c_{29}	c_{34}	c_{36}	c_{35}	c_{33}	c_{38}	c_{40}	c_{39}	c_{37}
A_{18}	c_{27}	c_{28}	c_{26}	c_{25}	c_{31}	c_{32}	c_{30}	c_{29}	c_{35}	c_{36}	c_{34}	c_{33}	c_{39}	c_{40}	c_{38}	c_{37}
A_{19}	c_{28}	c_{25}	c_{26}	c_{27}	c_{32}	c_{29}	c_{30}	c_{31}	c_{36}	c_{33}	c_{34}	c_{35}	c_{40}	c_{37}	c_{38}	c_{39}
A_{20}	c_{28}	c_{26}	c_{25}	c_{27}	c_{32}	c_{30}	c_{29}	c_{31}	c_{36}	c_{34}	c_{33}	c_{35}	c_{40}	c_{38}	c_{37}	c_{39}
A_{21}	c_{28}	c_{25}	c_{27}	c_{26}	c_{32}	c_{29}	c_{31}	c_{30}	c_{36}	c_{33}	c_{35}	c_{34}	c_{40}	c_{37}	c_{39}	c_{38}
A_{22}	c_{28}	c_{27}	c_{25}	c_{26}	c_{32}	c_{31}	c_{29}	c_{30}	c_{36}	c_{35}	c_{33}	c_{34}	c_{40}	c_{39}	c_{37}	c_{38}
A_{23}	c_{28}	c_{26}	c_{27}	c_{25}	c_{32}	c_{30}	c_{31}	c_{29}	c_{36}	c_{34}	c_{35}	c_{33}	c_{40}	c_{38}	c_{39}	c_{37}
A_{24}	c_{28}	c_{27}	c_{26}	c_{25}	c_{32}	c_{31}	c_{30}	c_{29}	c_{36}	c_{35}	c_{34}	c_{33}	c_{40}	c_{39}	c_{38}	c_{37}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{41}	c_{42}	c_{43}	c_{44}	c_{45}	c_{46}	c_{47}	c_{48}	c_{49}	c_{50}	c_{51}	c_{52}	c_{53}	c_{54}	c_{55}	c_{56}
A_{01}	c_{41}	c_{42}	c_{43}	c_{44}	c_{45}	c_{46}	c_{47}	c_{48}	c_{49}	c_{50}	c_{51}	c_{52}	c_{53}	c_{54}	c_{55}	c_{56}
A_{02}	c_{41}	c_{43}	c_{42}	c_{44}	c_{45}	c_{47}	c_{46}	c_{48}	c_{51}	c_{52}	c_{49}	c_{50}	c_{53}	c_{54}	c_{57}	c_{58}
A_{03}	c_{41}	c_{42}	c_{44}	c_{43}	c_{45}	c_{46}	c_{48}	c_{47}	c_{49}	c_{50}	c_{54}	c_{53}	c_{52}	c_{51}	c_{55}	c_{56}
A_{04}	c_{41}	c_{43}	c_{44}	c_{42}	c_{45}	c_{47}	c_{48}	c_{46}	c_{51}	c_{52}	c_{54}	c_{53}	c_{50}	c_{49}	c_{57}	c_{58}
A_{05}	c_{41}	c_{44}	c_{42}	c_{43}	c_{45}	c_{48}	c_{46}	c_{47}	c_{54}	c_{53}	c_{49}	c_{50}	c_{52}	c_{51}	c_{60}	c_{59}
A_{06}	c_{41}	c_{44}	c_{43}	c_{42}	c_{45}	c_{48}	c_{47}	c_{46}	c_{54}	c_{53}	c_{51}	c_{52}	c_{50}	c_{49}	c_{60}	c_{59}
A_{07}	c_{42}	c_{41}	c_{43}	c_{44}	c_{46}	c_{45}	c_{47}	c_{48}	c_{49}	c_{50}	c_{53}	c_{54}	c_{51}	c_{52}	c_{55}	c_{56}
A_{08}	c_{43}	c_{41}	c_{42}	c_{44}	c_{47}	c_{45}	c_{46}	c_{48}	c_{51}	c_{52}	c_{53}	c_{54}	c_{49}	c_{50}	c_{57}	c_{58}
A_{09}	c_{42}	c_{43}	c_{41}	c_{44}	c_{46}	c_{47}	c_{45}	c_{48}	c_{53}	c_{54}	c_{49}	c_{50}	c_{51}	c_{52}	c_{59}	c_{60}
A_{10}	c_{43}	c_{42}	c_{41}	c_{44}	c_{47}	c_{46}	c_{45}	c_{48}	c_{53}	c_{54}	c_{51}	c_{52}	c_{49}	c_{50}	c_{59}	c_{60}
A_{11}	c_{42}	c_{41}	c_{44}	c_{43}	c_{46}	c_{45}	c_{48}	c_{47}	c_{49}	c_{50}	c_{52}	c_{51}	c_{54}	c_{53}	c_{55}	c_{56}
A_{12}	c_{43}	c_{41}	c_{44}	c_{42}	c_{47}	c_{45}	c_{48}	c_{46}	c_{51}	c_{52}	c_{50}	c_{49}	c_{54}	c_{53}	c_{57}	c_{58}
A_{13}	c_{42}	c_{43}	c_{44}	c_{41}	c_{46}	c_{47}	c_{48}	c_{45}	c_{53}	c_{54}	c_{52}	c_{51}	c_{50}	c_{49}	c_{59}	c_{60}
A_{14}	c_{43}	c_{42}	c_{44}	c_{41}	c_{47}	c_{46}	c_{48}	c_{45}	c_{53}	c_{54}	c_{50}	c_{49}	c_{52}	c_{51}	c_{59}	c_{60}
A_{15}	c_{42}	c_{44}	c_{41}	c_{43}	c_{46}	c_{48}	c_{45}	c_{47}	c_{52}	c_{51}	c_{49}	c_{50}	c_{54}	c_{53}	c_{58}	c_{57}
A_{16}	c_{43}	c_{44}	c_{41}	c_{42}	c_{47}	c_{48}	c_{45}	c_{46}	c_{50}	c_{49}	c_{51}	c_{52}	c_{54}	c_{53}	c_{56}	c_{55}
A_{17}	c_{42}	c_{44}	c_{43}	c_{41}	c_{46}	c_{48}	c_{47}	c_{45}	c_{52}	c_{51}	c_{53}	c_{54}	c_{50}	c_{49}	c_{58}	c_{57}
A_{18}	c_{43}	c_{44}	c_{42}	c_{41}	c_{47}	c_{48}	c_{46}	c_{45}	c_{50}	c_{49}	c_{53}	c_{54}	c_{52}	c_{51}	c_{56}	c_{55}
A_{19}	c_{44}	c_{41}	c_{42}	c_{43}	c_{48}	c_{45}	c_{46}	c_{47}	c_{54}	c_{53}	c_{52}	c_{51}	c_{49}	c_{50}	c_{60}	c_{59}
A_{20}	c_{44}	c_{42}	c_{41}	c_{43}	c_{48}	c_{46}	c_{45}	c_{47}	c_{52}	c_{51}	c_{54}	c_{53}	c_{49}	c_{50}	c_{58}	c_{57}
A_{21}	c_{44}	c_{41}	c_{43}	c_{42}	c_{48}	c_{45}	c_{47}	c_{46}	c_{54}	c_{53}	c_{50}	c_{49}	c_{51}	c_{52}	c_{60}	c_{59}
A_{22}	c_{44}	c_{43}	c_{41}	c_{42}	c_{48}	c_{47}	c_{45}	c_{46}	c_{50}	c_{49}	c_{54}	c_{53}	c_{51}	c_{52}	c_{56}	c_{55}
A_{23}	c_{44}	c_{42}	c_{43}	c_{41}	c_{48}	c_{46}	c_{47}	c_{45}	c_{52}	c_{51}	c_{50}	c_{49}	c_{53}	c_{54}	c_{58}	c_{57}
A_{24}	c_{44}	c_{43}	c_{42}	c_{41}	c_{48}	c_{47}	c_{46}	c_{45}	c_{50}	c_{49}	c_{52}	c_{51}	c_{53}	c_{54}	c_{56}	c_{55}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
A_{01}	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
A_{02}	c_{55}	c_{56}	c_{59}	c_{60}	c_{63}	c_{64}	c_{61}	c_{62}	c_{65}	c_{66}	c_{69}	c_{70}	c_{67}	c_{68}	c_{71}	c_{72}
A_{03}	c_{60}	c_{59}	c_{58}	c_{57}	c_{61}	c_{62}	c_{66}	c_{65}	c_{64}	c_{63}	c_{67}	c_{68}	c_{72}	c_{71}	c_{70}	c_{69}
A_{04}	c_{60}	c_{59}	c_{56}	c_{55}	c_{63}	c_{64}	c_{66}	c_{65}	c_{62}	c_{61}	c_{69}	c_{70}	c_{72}	c_{71}	c_{68}	c_{67}
A_{05}	c_{55}	c_{56}	c_{58}	c_{57}	c_{66}	c_{65}	c_{61}	c_{62}	c_{64}	c_{63}	c_{72}	c_{71}	c_{67}	c_{68}	c_{70}	c_{69}
A_{06}	c_{57}	c_{58}	c_{56}	c_{55}	c_{66}	c_{65}	c_{63}	c_{64}	c_{62}	c_{61}	c_{72}	c_{71}	c_{69}	c_{70}	c_{68}	c_{67}
A_{07}	c_{59}	c_{60}	c_{57}	c_{58}	c_{61}	c_{62}	c_{65}	c_{66}	c_{63}	c_{64}	c_{67}	c_{68}	c_{71}	c_{72}	c_{69}	c_{70}
A_{08}	c_{59}	c_{60}	c_{55}	c_{56}	c_{63}	c_{64}	c_{65}	c_{66}	c_{61}	c_{62}	c_{69}	c_{70}	c_{71}	c_{72}	c_{67}	c_{68}
A_{09}	c_{55}	c_{56}	c_{57}	c_{58}	c_{65}	c_{66}	c_{61}	c_{62}	c_{63}	c_{64}	c_{71}	c_{72}	c_{67}	c_{68}	c_{69}	c_{70}
A_{10}	c_{57}	c_{58}	c_{55}	c_{56}	c_{65}	c_{66}	c_{63}	c_{64}	c_{61}	c_{62}	c_{71}	c_{72}	c_{69}	c_{70}	c_{67}	c_{68}
A_{11}	c_{58}	c_{57}	c_{60}	c_{59}	c_{61}	c_{62}	c_{64}	c_{63}	c_{66}	c_{65}	c_{67}	c_{68}	c_{70}	c_{69}	c_{72}	c_{71}
A_{12}	c_{56}	c_{55}	c_{60}	c_{59}	c_{63}	c_{64}	c_{62}	c_{61}	c_{66}	c_{65}	c_{69}	c_{70}	c_{68}	c_{67}	c_{72}	c_{71}
A_{13}	c_{58}	c_{57}	c_{56}	c_{55}	c_{65}	c_{66}	c_{64}	c_{63}	c_{62}	c_{61}	c_{71}	c_{72}	c_{70}	c_{69}	c_{68}	c_{67}
A_{14}	c_{56}	c_{55}	c_{58}	c_{57}	c_{65}	c_{66}	c_{62}	c_{61}	c_{64}	c_{63}	c_{71}	c_{72}	c_{68}	c_{67}	c_{70}	c_{69}
A_{15}	c_{55}	c_{56}	c_{60}	c_{59}	c_{64}	c_{63}	c_{61}	c_{62}	c_{66}	c_{65}	c_{70}	c_{69}	c_{67}	c_{68}	c_{72}	c_{71}
A_{16}	c_{57}	c_{58}	c_{60}	c_{59}	c_{62}	c_{61}	c_{63}	c_{64}	c_{66}	c_{65}	c_{68}	c_{67}	c_{69}	c_{70}	c_{72}	c_{71}
A_{17}	c_{59}	c_{60}	c_{56}	c_{55}	c_{64}	c_{63}	c_{65}	c_{66}	c_{62}	c_{61}	c_{70}	c_{69}	c_{71}	c_{72}	c_{68}	c_{67}
A_{18}	c_{59}	c_{60}	c_{58}	c_{57}	c_{62}	c_{61}	c_{65}	c_{66}	c_{64}	c_{63}	c_{68}	c_{67}	c_{71}	c_{72}	c_{70}	c_{69}
A_{19}	c_{58}	c_{57}	c_{55}	c_{56}	c_{66}	c_{65}	c_{64}	c_{63}	c_{61}	c_{62}	c_{72}	c_{71}	c_{70}	c_{69}	c_{67}	c_{68}
A_{20}	c_{60}	c_{59}	c_{55}	c_{56}	c_{64}	c_{63}	c_{66}	c_{65}	c_{61}	c_{62}	c_{70}	c_{69}	c_{72}	c_{71}	c_{67}	c_{68}
A_{21}	c_{56}	c_{55}	c_{57}	c_{58}	c_{66}	c_{65}	c_{62}	c_{61}	c_{63}	c_{64}	c_{72}	c_{71}	c_{68}	c_{67}	c_{69}	c_{70}
A_{22}	c_{60}	c_{59}	c_{57}	c_{58}	c_{62}	c_{61}	c_{66}	c_{65}	c_{63}	c_{64}	c_{68}	c_{67}	c_{72}	c_{71}	c_{69}	c_{70}
A_{23}	c_{56}	c_{55}	c_{59}	c_{60}	c_{64}	c_{63}	c_{62}	c_{61}	c_{65}	c_{66}	c_{70}	c_{69}	c_{68}	c_{67}	c_{71}	c_{72}
A_{24}	c_{58}	c_{57}	c_{59}	c_{60}	c_{62}	c_{61}	c_{64}	c_{63}	c_{65}	c_{66}	c_{68}	c_{67}	c_{70}	c_{69}	c_{71}	c_{72}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
A_{01}	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
A_{02}	C_{75}	C_{76}	C_{73}	C_{74}	C_{77}	C_{78}	C_{81}	C_{82}	C_{79}	C_{80}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
A_{03}	C_{73}	C_{74}	C_{78}	C_{77}	C_{76}	C_{75}	C_{79}	C_{80}	C_{84}	C_{83}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
A_{04}	C_{75}	C_{76}	C_{78}	C_{77}	C_{74}	C_{73}	C_{81}	C_{82}	C_{84}	C_{83}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
A_{05}	C_{78}	C_{77}	C_{73}	C_{74}	C_{76}	C_{75}	C_{84}	C_{83}	C_{79}	C_{80}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
A_{06}	C_{78}	C_{77}	C_{75}	C_{76}	C_{74}	C_{73}	C_{84}	C_{83}	C_{81}	C_{82}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
A_{07}	C_{73}	C_{74}	C_{77}	C_{78}	C_{75}	C_{76}	C_{79}	C_{80}	C_{83}	C_{84}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
A_{08}	C_{75}	C_{76}	C_{77}	C_{78}	C_{73}	C_{74}	C_{81}	C_{82}	C_{83}	C_{84}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
A_{09}	C_{77}	C_{78}	C_{73}	C_{74}	C_{75}	C_{76}	C_{83}	C_{84}	C_{79}	C_{80}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
A_{10}	C_{77}	C_{78}	C_{75}	C_{76}	C_{73}	C_{74}	C_{83}	C_{84}	C_{81}	C_{82}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
A_{11}	C_{73}	C_{74}	C_{76}	C_{75}	C_{78}	C_{77}	C_{79}	C_{80}	C_{82}	C_{81}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
A_{12}	C_{75}	C_{76}	C_{74}	C_{73}	C_{78}	C_{77}	C_{81}	C_{82}	C_{80}	C_{79}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
A_{13}	C_{77}	C_{78}	C_{76}	C_{75}	C_{74}	C_{73}	C_{83}	C_{84}	C_{82}	C_{81}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
A_{14}	C_{77}	C_{78}	C_{74}	C_{73}	C_{76}	C_{75}	C_{83}	C_{84}	C_{80}	C_{79}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
A_{15}	C_{76}	C_{75}	C_{73}	C_{74}	C_{78}	C_{77}	C_{82}	C_{81}	C_{79}	C_{80}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
A_{16}	C_{74}	C_{73}	C_{75}	C_{76}	C_{78}	C_{77}	C_{80}	C_{79}	C_{81}	C_{82}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
A_{17}	C_{76}	C_{75}	C_{77}	C_{78}	C_{74}	C_{73}	C_{82}	C_{81}	C_{83}	C_{84}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
A_{18}	C_{74}	C_{73}	C_{77}	C_{78}	C_{76}	C_{75}	C_{80}	C_{79}	C_{83}	C_{84}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
A_{19}	C_{78}	C_{77}	C_{76}	C_{75}	C_{73}	C_{74}	C_{84}	C_{83}	C_{82}	C_{81}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
A_{20}	C_{76}	C_{75}	C_{78}	C_{77}	C_{73}	C_{74}	C_{82}	C_{81}	C_{84}	C_{83}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
A_{21}	C_{78}	C_{77}	C_{74}	C_{73}	C_{75}	C_{76}	C_{84}	C_{83}	C_{80}	C_{79}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
A_{22}	C_{74}	C_{73}	C_{78}	C_{77}	C_{75}	C_{76}	C_{80}	C_{79}	C_{84}	C_{83}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
A_{23}	C_{76}	C_{75}	C_{74}	C_{73}	C_{77}	C_{78}	C_{82}	C_{81}	C_{80}	C_{79}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
A_{24}	C_{74}	C_{73}	C_{76}	C_{75}	C_{77}	C_{78}	C_{80}	C_{79}	C_{82}	C_{81}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{01}	B_{01}	B_{07}	B_{05}	B_{17}	B_{11}	B_{15}	B'_{30}	B_{65}	B'_{32}	B_{35}	B'_{28}	B_{95}	B'_{33}	B_{36}	B'_{29}	B_{96}
B_{02}	B_{02}	B_{09}	B_{06}	B_{16}	B_{10}	B_{13}	B'_{16}	B_{53}	B'_{17}	B_{23}	B'_{18}	B_{83}	B'_{19}	B_{24}	B'_{20}	B_{84}
B_{03}	B_{03}	B_{08}	B_{04}	B_{14}	B_{12}	B_{18}	B'_{10}	B_{55}	B'_{11}	B_{19}	B'_{12}	B_{79}	B'_{13}	B_{20}	B'_{14}	B_{80}
B_{04}	B_{04}	B_{12}	B_{03}	B_{18}	B_{08}	B_{14}	B'_{12}	B_{49}	B'_{14}	B_{21}	B'_{10}	B_{81}	B'_{15}	B_{22}	B'_{11}	B_{82}
B_{05}	B_{05}	B_{11}	B_{01}	B_{15}	B_{07}	B_{17}	B'_{28}	B_{63}	B'_{29}	B_{33}	B'_{30}	B_{93}	B'_{31}	B_{34}	B'_{32}	B_{94}
B_{06}	B_{06}	B_{10}	B_{02}	B_{13}	B_{09}	B_{16}	B'_{18}	B_{51}	B'_{20}	B_{25}	B'_{16}	B_{85}	B'_{21}	B_{26}	B'_{17}	B_{86}
B_{07}	B_{07}	B_{01}	B_{17}	B_{05}	B_{15}	B_{11}	B_{65}	B'_{30}	B_{35}	B'_{32}	B_{95}	B'_{28}	B_{36}	B'_{33}	B_{96}	B'_{29}
B_{08}	B_{08}	B_{03}	B_{14}	B_{04}	B_{18}	B_{12}	B_{55}	B'_{10}	B_{19}	B'_{11}	B_{79}	B'_{12}	B_{20}	B'_{13}	B_{80}	B'_{14}
B_{09}	B_{09}	B_{02}	B_{16}	B_{06}	B_{13}	B_{10}	B_{53}	B'_{16}	B_{23}	B'_{17}	B_{83}	B'_{18}	B_{24}	B'_{19}	B_{84}	B'_{20}
B_{10}	B_{10}	B_{06}	B_{13}	B_{02}	B_{16}	B_{09}	B_{51}	B'_{18}	B_{25}	B'_{20}	B_{85}	B'_{16}	B_{26}	B'_{21}	B_{86}	B'_{17}
B_{11}	B_{11}	B_{05}	B_{15}	B_{01}	B_{17}	B_{07}	B_{66}	B'_{28}	B_{33}	B'_{29}	B_{93}	B'_{30}	B_{34}	B'_{31}	B_{94}	B'_{32}
B_{12}	B_{12}	B_{04}	B_{18}	B_{03}	B_{14}	B_{08}	B_{49}	B'_{12}	B_{21}	B'_{14}	B_{81}	B'_{10}	B_{22}	B'_{15}	B_{82}	B'_{11}
B_{13}	B_{13}	B_{16}	B_{10}	B_{09}	B_{06}	B_{02}	B_{85}	B_{83}	B_{86}	B_{84}	B_{51}	B_{53}	B_{52}	B_{54}	B_{25}	B_{23}
B_{14}	B_{14}	B_{18}	B_{08}	B_{12}	B_{03}	B_{04}	B_{79}	B_{81}	B_{80}	B_{82}	B_{55}	B_{49}	B_{56}	B_{50}	B_{19}	B_{21}
B_{15}	B_{15}	B_{17}	B_{11}	B_{07}	B_{05}	B_{01}	B_{93}	B_{95}	B_{94}	B_{96}	B_{63}	B_{65}	B_{64}	B_{66}	B_{33}	B_{35}
B_{16}	B_{16}	B_{13}	B_{09}	B_{10}	B_{02}	B_{06}	B_{83}	B_{85}	B_{84}	B_{86}	B_{53}	B_{51}	B_{54}	B_{52}	B_{23}	B_{25}
B_{17}	B_{17}	B_{15}	B_{07}	B_{11}	B_{01}	B_{05}	B_{95}	B_{93}	B_{96}	B_{94}	B_{65}	B_{63}	B_{66}	B_{64}	B_{35}	B_{33}
B_{18}	B_{18}	B_{14}	B_{12}	B_{08}	B_{04}	B_{03}	B_{81}	B_{79}	B_{82}	B_{80}	B_{49}	B_{55}	B_{50}	B_{56}	B_{21}	B_{19}
B_{19}	B_{19}	B_{55}	B_{20}	B_{79}	B_{56}	B_{80}	B'_{11}	B_{08}	B'_{10}	B_{03}	B'_{13}	B_{14}	B'_{12}	B_{04}	B'_{15}	B_{18}
B_{20}	B_{20}	B_{56}	B_{19}	B_{80}	B_{55}	B_{79}	B'_{13}	B_{50}	B'_{15}	B_{22}	B'_{11}	B_{82}	B'_{14}	B_{21}	B'_{10}	B_{81}
B_{21}	B_{21}	B_{49}	B_{22}	B_{81}	B_{50}	B_{82}	B'_{14}	B_{12}	B'_{12}	B_{04}	B'_{15}	B_{18}	B'_{10}	B_{03}	B'_{13}	B_{14}
B_{22}	B_{22}	B_{50}	B_{21}	B_{82}	B_{49}	B_{81}	B'_{15}	B_{56}	B'_{13}	B_{20}	B'_{14}	B_{80}	B'_{11}	B_{19}	B'_{12}	B_{79}
B_{23}	B_{23}	B_{53}	B_{24}	B_{83}	B_{54}	B_{84}	B'_{17}	B_{09}	B'_{16}	B_{02}	B'_{19}	B_{16}	B'_{18}	B_{06}	B'_{21}	B_{13}
B_{24}	B_{24}	B_{54}	B_{23}	B_{84}	B_{53}	B_{83}	B'_{19}	B_{52}	B'_{21}	B_{26}	B'_{17}	B_{86}	B'_{20}	B_{25}	B'_{16}	B_{85}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
B_{01}	B_{31}	B_{66}	B_{63}	B_{33}	B_{93}	B_{94}	B_{34}	B_{64}	B_{01}	B_{01}	C_{01}	C_{02}	B_{05}	B_{05}	B_{07}	C_{01}
B_{02}	B_{21}	B_{54}	B_{51}	B_{25}	B_{85}	B_{86}	B_{26}	B_{52}	B_{02}	B_{02}	C_{01}	C_{02}	B_{06}	B_{06}	B_{09}	C_{01}
B_{03}	B_{15}	B_{56}	B_{49}	B_{21}	B_{81}	B_{82}	B_{22}	B_{50}	B_{03}	B_{03}	C_{01}	C_{02}	B_{04}	B_{04}	B_{08}	C_{01}
B_{04}	B_{13}	B_{50}	B_{55}	B_{19}	B_{79}	B_{80}	B_{20}	B_{56}	B_{04}	B_{04}	C_{01}	C_{02}	B_{03}	B_{03}	B_{12}	C_{01}
B_{05}	B_{33}	B_{64}	B_{65}	B_{35}	B_{95}	B_{96}	B_{36}	B_{66}	B_{05}	B_{05}	C_{01}	C_{02}	B_{01}	B_{01}	B_{11}	C_{01}
B_{06}	B_{19}	B_{52}	B_{53}	B_{23}	B_{83}	B_{84}	B_{24}	B_{54}	B_{06}	B_{06}	C_{01}	C_{02}	B_{02}	B_{02}	B_{10}	C_{01}
B_{07}	B_{66}	B_{31}	B_{93}	B_{94}	B_{63}	B_{33}	B_{64}	B_{34}	B_{01}	C_{01}	B_{01}	B_{05}	B_{05}	C_{02}	B_{07}	B_{07}
B_{08}	B_{56}	B_{15}	B_{81}	B_{82}	B_{49}	B_{21}	B_{50}	B_{22}	B_{03}	C_{01}	B_{03}	B_{04}	B_{04}	C_{02}	B_{08}	B_{08}
B_{09}	B_{54}	B_{21}	B_{85}	B_{86}	B_{51}	B_{25}	B_{52}	B_{26}	B_{02}	C_{01}	B_{02}	B_{06}	B_{06}	C_{02}	B_{09}	B_{09}
B_{10}	B_{52}	B_{19}	B_{83}	B_{84}	B_{53}	B_{23}	B_{54}	B_{24}	B_{06}	C_{01}	B_{06}	B_{02}	B_{02}	C_{02}	B_{10}	B_{10}
B_{11}	B_{64}	B_{33}	B_{95}	B_{96}	B_{65}	B_{35}	B_{66}	B_{36}	B_{05}	C_{01}	B_{05}	B_{01}	B_{01}	C_{02}	B_{11}	B_{11}
B_{12}	B_{49}	B_{13}	B_{79}	B_{80}	B_{55}	B_{19}	B_{56}	B_{20}	B_{04}	C_{01}	B_{04}	B_{03}	B_{03}	C_{02}	B_{12}	B_{12}
B_{13}	B_{26}	B_{24}	B_{18}	B_{20}	B_{16}	B_{17}	B_{21}	B_{19}	C_{02}	B_{02}	B_{06}	B_{02}	C_{01}	B_{06}	C_{03}	B_{10}
B_{14}	B_{20}	B_{22}	B_{10}	B_{11}	B_{12}	B_{14}	B_{13}	B_{15}	C_{02}	B_{04}	B_{03}	B_{04}	C_{01}	B_{03}	C_{03}	B_{08}
B_{15}	B_{34}	B_{36}	B_{28}	B_{29}	B_{30}	B_{32}	B_{31}	B_{33}	C_{02}	B_{01}	B_{05}	B_{01}	C_{01}	B_{05}	C_{03}	B_{11}
B_{16}	B_{24}	B_{26}	B_{16}	B_{17}	B_{18}	B_{20}	B_{19}	B_{21}	C_{02}	B_{06}	B_{02}	B_{06}	C_{01}	B_{02}	C_{03}	B_{09}
B_{17}	B_{36}	B_{34}	B_{30}	B_{32}	B_{28}	B_{29}	B_{33}	B_{31}	C_{02}	B_{05}	B_{01}	B_{05}	C_{01}	B_{01}	C_{03}	B_{07}
B_{18}	B_{22}	B_{20}	B_{12}	B_{14}	B_{10}	B_{11}	B_{15}	B_{13}	C_{02}	B_{03}	B_{04}	B_{03}	C_{01}	B_{04}	C_{03}	B_{12}
B_{19}	B_{44}	B_{12}	B_{50}	B_{22}	B_{82}	B_{81}	B_{21}	B_{49}	B_{19}	B_{19}	C_{04}	C_{11}	B_{20}	B_{20}	B_{55}	C_{04}
B_{20}	B_{12}	B_{49}	B_{08}	B_{03}	B_{14}	B_{18}	B_{04}	B_{12}	B_{20}	B_{20}	C_{04}	C_{11}	B_{19}	B_{19}	B_{56}	C_{04}
B_{21}	B_{11}	B_{08}	B_{56}	B_{20}	B_{80}	B_{79}	B_{19}	B_{55}	B_{21}	B_{21}	C_{62}	C_{74}	B_{22}	B_{22}	B_{49}	C_{62}
B_{22}	B_{10}	B_{55}	B_{12}	B_{04}	B_{18}	B_{14}	B_{03}	B_{08}	B_{22}	B_{22}	C_{62}	C_{74}	B_{21}	B_{21}	B_{50}	C_{62}
B_{23}	B_{20}	B_{10}	B_{52}	B_{26}	B_{86}	B_{85}	B_{25}	B_{51}	B_{23}	B_{23}	C_{05}	C_{12}	B_{24}	B_{24}	B_{53}	C_{05}
B_{24}	B_{18}	B_{51}	B_{09}	B_{02}	B_{16}	B_{13}	B_{06}	B_{10}	B_{24}	B_{24}	C_{05}	C_{12}	B_{23}	B_{23}	B_{54}	C_{05}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B_{01}	B_{07}	B_{11}	B_{11}	C_{03}	B_{15}	C_{02}	B_{15}	A_{17}	B_{17}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{35}	B_{36}
B_{02}	B_{09}	B_{10}	B_{10}	C_{03}	B_{13}	C_{02}	B_{13}	B_{16}	B_{16}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{23}	B_{24}
B_{03}	B_{08}	B_{12}	B_{12}	C_{03}	B_{18}	C_{02}	B_{18}	B_{14}	B_{14}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{19}	B_{20}
B_{04}	B_{12}	B_{08}	B_{08}	C_{03}	B_{14}	C_{02}	B_{14}	B_{18}	B_{18}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{21}	B_{22}
B_{05}	B_{11}	B_{07}	B_{07}	C_{03}	B_{17}	C_{02}	B_{17}	B_{15}	B_{15}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{33}	B_{34}
B_{06}	B_{10}	B_{09}	B_{09}	C_{03}	B_{16}	C_{02}	B_{16}	B_{13}	B_{13}	C_{03}	C_{25}	C_{29}	C_{14}	C_{07}	B_{31}	B_{32}
B_{07}	C_{01}	C_{03}	B_{11}	B_{11}	C_{03}	B_{17}	B_{15}	C_{02}	B_{17}	B_{15}	B_{35}	B_{36}	B_{33}	B_{34}	C_{25}	C_{29}
B_{08}	C_{01}	C_{03}	B_{12}	B_{12}	C_{03}	B_{14}	B_{18}	C_{02}	B_{14}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	C_{25}	C_{29}
B_{09}	C_{01}	C_{03}	B_{10}	B_{10}	C_{03}	B_{16}	B_{13}	C_{02}	B_{16}	B_{13}	B_{23}	B_{24}	B_{25}	B_{26}	C_{25}	C_{29}
B_{10}	C_{01}	C_{03}	B_{09}	B_{09}	C_{03}	B_{13}	B_{16}	C_{02}	B_{13}	B_{16}	B_{25}	B_{26}	B_{23}	B_{24}	C_{25}	C_{29}
B_{11}	C_{01}	C_{03}	B_{07}	B_{07}	C_{03}	B_{15}	B_{17}	C_{02}	B_{15}	B_{17}	B_{33}	B_{34}	B_{35}	B_{36}	C_{25}	C_{29}
B_{12}	C_{01}	C_{03}	B_{08}	B_{08}	C_{03}	B_{18}	B_{14}	C_{02}	B_{18}	B_{14}	B_{21}	B_{22}	B_{19}	B_{20}	C_{25}	C_{29}
B_{13}	B_{09}	B_{10}	C_{01}	B_{09}	P_{13}	B_{13}	C_{02}	B_{16}	C_{03}	B_{16}	B_{25}	B_{26}	B_{23}	B_{24}	B_{23}	B_{24}
B_{14}	B_{12}	B_{08}	C_{01}	B_{12}	B_{14}	B_{14}	C_{02}	B_{18}	C_{03}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{21}	B_{22}
B_{15}	B_{07}	B_{11}	C_{01}	B_{07}	B_{15}	B_{15}	C_{02}	B_{17}	C_{03}	B_{17}	B_{33}	B_{34}	B_{35}	B_{36}	B_{35}	B_{36}
B_{16}	B_{10}	B_{09}	C_{01}	B_{10}	B_{16}	B_{16}	C_{02}	B_{13}	C_{03}	B_{13}	B_{23}	B_{24}	B_{25}	B_{26}	B_{25}	B_{26}
B_{17}	B_{11}	B_{07}	C_{01}	B_{11}	B_{17}	B_{17}	C_{02}	B_{15}	C_{03}	B_{15}	B_{35}	B_{36}	B_{33}	B_{34}	B_{33}	B_{34}
B_{18}	B_{08}	B_{12}	C_{01}	B_{08}	B_{18}	B_{18}	C_{02}	B_{14}	C_{03}	B_{14}	B_{21}	B_{22}	B_{19}	B_{20}	B_{19}	B_{20}
B_{19}	B_{55}	B_{56}	B_{56}	C_{18}	B_{80}	C_{11}	B_{80}	B_{79}	B_{79}	C_{18}	C_{26}	C_{30}	C_{15}	C_{09}	B_{03}	B_{04}
B_{20}	B_{56}	B_{55}	B_{55}	C_{18}	B_{79}	C_{11}	B_{79}	B_{80}	B_{80}	C_{18}	C_{26}	C_{30}	C_{15}	C_{09}	B_{22}	B_{21}
B_{21}	B_{49}	B_{50}	B_{50}	C_{80}	B_{82}	C_{74}	B_{82}	B_{81}	B_{81}	C_{80}	C_{50}	C_{49}	C_{73}	C_{61}	B_{04}	B_{03}
B_{22}	B_{50}	B_{49}	B_{49}	C_{80}	B_{81}	C_{74}	B_{81}	B_{82}	B_{82}	C_{80}	C_{50}	C_{49}	C_{73}	C_{61}	B_{20}	B_{19}
B_{23}	B_{53}	B_{54}	B_{54}	C_{19}	B_{84}	C_{12}	B_{84}	B_{83}	B_{83}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{02}	B_{06}
B_{24}	B_{54}	B_{53}	B_{53}	C_{19}	B_{83}	C_{12}	B_{83}	B_{84}	B_{84}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{26}	B_{25}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{01}	B_{33}	B_{34}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	B_{33}	B_{34}	B_{35}	B_{36}	C_{28}	C_{06}	C_{32}	C_{13}
B_{02}	B_{31}	B_{26}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{25}	B_{26}	B_{23}	B_{24}	C_{52}	C_{64}	C_{51}	C_{76}
B_{03}	B_{21}	B_{22}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{21}	B_{22}	B_{19}	B_{20}	C_{50}	C_{62}	C_{49}	C_{74}
B_{04}	B_{19}	B_{20}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	B_{22}	B_{20}	B_{21}	B_{22}	C_{26}	C_{04}	C_{30}	C_{11}
B_{05}	B_{35}	B_{36}	C_{28}	C_{03}	C_{32}	C_{13}	C_{10}	C_{17}	B_{35}	B_{36}	B_{33}	B_{34}	C_{53}	C_{65}	C_{54}	C_{77}
B_{06}	B_{23}	B_{24}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	B_{23}	B_{24}	B_{25}	B_{26}	C_{27}	C_{05}	C_{31}	C_{12}
B_{07}	C_{14}	C_{07}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	B_{33}	B_{34}	B_{35}	B_{36}	B_{36}	B_{34}	B_{35}	B_{33}
B_{08}	C_{14}	C_{07}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{21}	B_{22}	B_{19}	B_{20}	B_{21}	B_{22}	B_{19}	B_{21}
B_{09}	C_{14}	C_{07}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{25}	B_{26}	B_{23}	B_{24}	B_{24}	B_{26}	B_{23}	B_{25}
B_{10}	C_{14}	C_{07}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	B_{23}	B_{24}	B_{25}	B_{26}	B_{26}	B_{24}	B_{25}	B_{23}
B_{11}	C_{14}	C_{07}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{35}	B_{36}	B_{33}	B_{34}	B_{34}	B_{36}	B_{33}	B_{35}
B_{12}	C_{14}	C_{07}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	B_{19}	B_{20}	B_{21}	B_{22}	B_{22}	B_{20}	B_{21}	B_{19}
B_{13}	B_{25}	B_{26}	B_{26}	B_{24}	B_{25}	B_{23}	B_{06}	B_{02}	C_{25}	C_{29}	C_{14}	C_{07}	C_{64}	C_{52}	C_{76}	C_{51}
B_{14}	B_{19}	B_{20}	B_{20}	B_{22}	B_{19}	B_{21}	B_{03}	B_{04}	C_{25}	C_{29}	C_{14}	C_{07}	C_{04}	C_{26}	C_{11}	C_{30}
B_{15}	B_{33}	B_{34}	B_{34}	B_{36}	B_{33}	B_{35}	B_{05}	B_{01}	C_{25}	C_{29}	C_{14}	C_{07}	C_{06}	C_{28}	C_{13}	C_{32}
B_{16}	B_{23}	B_{24}	B_{24}	B_{26}	B_{23}	B_{25}	B_{02}	B_{06}	C_{25}	C_{29}	C_{14}	C_{07}	C_{05}	C_{27}	C_{12}	C_{31}
B_{17}	B_{35}	B_{36}	B_{36}	B_{34}	B_{35}	B_{33}	B_{01}	B_{05}	C_{25}	C_{29}	C_{14}	C_{07}	C_{65}	C_{53}	C_{78}	C_{54}
B_{18}	B_{21}	B_{22}	B_{22}	B_{20}	B_{21}	B_{19}	B_{04}	B_{03}	C_{25}	C_{29}	C_{14}	C_{07}	C_{62}	C_{50}	C_{74}	C_{49}
B_{19}	B_{22}	B_{21}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{22}	B_{21}	B_{03}	B_{04}	C_{50}	C_{62}	C_{49}	C_{74}
B_{20}	B_{03}	B_{04}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	B_{03}	B_{04}	B_{22}	B_{21}	C_{25}	C_{01}	C_{29}	C_{02}
B_{21}	B_{20}	B_{19}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{20}	B_{19}	B_{04}	B_{03}	C_{26}	C_{04}	C_{30}	C_{11}
B_{22}	B_{04}	B_{03}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{04}	B_{03}	B_{20}	B_{19}	C_{25}	C_{01}	C_{29}	C_{02}
B_{23}	B_{26}	B_{25}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{26}	B_{25}	B_{02}	B_{06}	C_{52}	C_{64}	C_{51}	C_{76}
B_{24}	B_{02}	B_{06}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	B_{02}	B_{06}	B_{26}	B_{25}	C_{25}	C_{01}	C_{29}	C_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{01}	C_{10}	C_{17}	B_{36}	B_{34}	B_{35}	B_{33}	B_{01}	B_{05}	C_{21}	C_{07}	B_{63}	B_{64}	B_{65}	B_{66}	C_{33}	C_{37}
B_{02}	C_{63}	C_{75}	B_{24}	B_{26}	B_{23}	B_{25}	B_{02}	B_{06}	C_{21}	C_{07}	B_{51}	B_{52}	B_{52}	B_{54}	C_{33}	C_{37}
B_{03}	C_{61}	C_{73}	B_{20}	B_{22}	B_{19}	B_{20}	B_{03}	B_{04}	C_{21}	C_{07}	B_{49}	B_{50}	B_{55}	B_{56}	C_{33}	C_{37}
B_{04}	C_{08}	C_{15}	B_{22}	B_{20}	B_{21}	B_{19}	B_{04}	B_{03}	C_{21}	C_{07}	B_{55}	B_{56}	B_{49}	B_{50}	C_{33}	C_{37}
B_{05}	C_{66}	C_{78}	B_{34}	B_{36}	B_{33}	B_{34}	B_{05}	B_{01}	C_{21}	C_{07}	B_{65}	B_{66}	B_{63}	B_{64}	C_{33}	C_{37}
B_{06}	C_{09}	C_{16}	B_{26}	B_{24}	B_{25}	B_{23}	B_{06}	B_{02}	C_{21}	C_{07}	B_{53}	B_{54}	B_{51}	B_{52}	C_{33}	C_{37}
B_{07}	B_{01}	B_{05}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{63}	B_{64}	C_{21}	C_{07}	C_{33}	C_{37}	B_{65}	B_{66}
B_{08}	B_{03}	B_{04}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	B_{49}	B_{50}	C_{21}	C_{07}	C_{33}	C_{37}	B_{55}	B_{56}
B_{09}	B_{02}	B_{06}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	B_{51}	B_{52}	C_{21}	C_{07}	C_{33}	C_{37}	B_{53}	B_{54}
B_{10}	B_{06}	B_{02}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{53}	B_{54}	C_{21}	C_{07}	C_{33}	C_{37}	B_{51}	B_{52}
B_{11}	B_{05}	B_{01}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	B_{65}	B_{66}	C_{21}	C_{07}	C_{33}	C_{37}	B_{63}	B_{64}
B_{12}	B_{04}	B_{03}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{55}	B_{56}	C_{21}	C_{07}	C_{33}	C_{37}	B_{49}	B_{50}
B_{13}	C_{75}	C_{63}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{53}	B_{54}	B_{51}	B_{52}	B_{53}	B_{54}	B_{51}	B_{52}
B_{14}	C_{15}	C_{08}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	B_{49}	B_{50}	B_{55}	B_{56}	B_{49}	B_{50}	B_{55}	B_{56}
B_{15}	C_{17}	C_{10}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	B_{65}	B_{66}	B_{63}	B_{64}	B_{65}	B_{66}	B_{63}	B_{64}
B_{16}	C_{16}	C_{09}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	B_{51}	B_{52}	B_{53}	B_{54}	B_{51}	B_{52}	B_{53}	B_{54}
B_{17}	C_{77}	C_{66}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{63}	B_{64}	B_{65}	B_{66}	B_{63}	B_{64}	B_{65}	B_{66}
B_{18}	C_{73}	C_{61}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{55}	B_{56}	B_{49}	B_{50}	B_{55}	B_{56}	B_{49}	B_{50}
B_{19}	C_{61}	C_{73}	B_{04}	B_{21}	B_{03}	B_{22}	B_{19}	B_{20}	C_{22}	C_{08}	B_{50}	B_{49}	B_{08}	B_{12}	C_{34}	C_{38}
B_{20}	C_{07}	C_{14}	B_{21}	B_{04}	B_{22}	B_{03}	B_{20}	B_{19}	C_{22}	C_{08}	B_{08}	B_{12}	B_{50}	B_{49}	C_{34}	C_{38}
B_{21}	C_{08}	C_{15}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	C_{79}	C_{61}	B_{56}	B_{55}	B_{12}	B_{08}	C_{56}	C_{55}
B_{22}	C_{07}	C_{14}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	C_{79}	C_{61}	B_{12}	B_{08}	B_{56}	B_{55}	C_{56}	C_{55}
B_{23}	C_{63}	C_{75}	B_{06}	B_{25}	B_{02}	B_{26}	B_{23}	B_{24}	C_{23}	C_{09}	B_{52}	B_{51}	B_{09}	B_{10}	C_{35}	C_{39}
B_{24}	C_{07}	C_{14}	B_{25}	B_{06}	B_{26}	B_{02}	B_{24}	B_{23}	C_{23}	C_{09}	B_{09}	B_{10}	B_{52}	B_{51}	C_{35}	C_{39}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{01}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}	B_{63}	B_{64}	B_{65}	B_{66}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{02}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{51}	B_{52}	B_{53}	B_{54}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}
B_{03}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{49}	B_{50}	B_{55}	B_{56}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}
B_{04}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}	B_{55}	B_{56}	B_{49}	B_{50}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{05}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{65}	B_{66}	B_{63}	B_{64}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}
B_{06}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}	B_{52}	B_{54}	B_{51}	B_{52}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{33}
B_{07}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	B_{63}	B_{64}	B_{65}	B_{66}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}
B_{08}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{49}	B_{50}	B_{55}	B_{56}	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}
B_{09}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{51}	B_{52}	B_{53}	B_{54}	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}
B_{10}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	B_{53}	B_{54}	B_{51}	B_{52}	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}
B_{11}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{65}	B_{66}	B_{63}	B_{64}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}
B_{12}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	B_{55}	B_{56}	B_{49}	B_{50}	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}
B_{13}	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}	C_{33}	C_{37}	C_{21}	C_{07}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}
B_{14}	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}	C_{33}	C_{37}	C_{21}	C_{07}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{15}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}	C_{33}	C_{37}	C_{21}	C_{07}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
B_{16}	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}	C_{33}	C_{37}	C_{21}	C_{07}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{17}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}	C_{33}	C_{37}	C_{21}	C_{07}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}
B_{18}	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}	C_{33}	C_{37}	C_{21}	C_{07}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}
B_{19}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{50}	B_{49}	B_{08}	B_{12}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}
B_{20}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}	B_{08}	B_{12}	B_{50}	B_{49}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
B_{21}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{56}	B_{55}	B_{12}	B_{08}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{22}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{12}	B_{08}	B_{56}	B_{55}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
B_{23}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{52}	B_{51}	B_{09}	B_{10}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}
B_{24}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}	B_{09}	B_{10}	B_{52}	B_{51}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B_{01}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}	C_{41}	C_{45}	C_{21}	C_{14}	B_{95}	B_{96}	B_{93}	B_{94}	C_{71}	C_{77}
B_{02}	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}	C_{41}	C_{45}	C_{21}	C_{14}	B_{83}	B_{84}	B_{85}	B_{86}	C_{43}	C_{12}
B_{03}	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}	C_{41}	C_{45}	C_{21}	C_{14}	B_{79}	B_{80}	B_{81}	B_{82}	C_{42}	C_{11}
B_{04}	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}	C_{41}	C_{45}	C_{21}	C_{14}	B_{81}	B_{82}	B_{79}	B_{86}	C_{68}	C_{74}
B_{05}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}	C_{41}	C_{45}	C_{21}	C_{14}	B_{93}	B_{94}	B_{95}	B_{96}	C_{44}	C_{13}
B_{06}	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}	C_{41}	C_{45}	C_{21}	C_{14}	B_{85}	B_{86}	B_{83}	B_{84}	C_{70}	C_{76}
B_{07}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{95}	B_{96}	B_{93}	B_{94}	C_{41}	C_{45}	C_{21}	C_{14}	C_{77}	C_{71}
B_{08}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}	B_{79}	B_{80}	B_{81}	B_{82}	C_{41}	C_{45}	C_{21}	C_{14}	C_{11}	C_{42}
B_{09}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}	B_{83}	B_{84}	B_{85}	B_{86}	C_{41}	C_{45}	C_{21}	C_{14}	C_{12}	C_{43}
B_{10}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{85}	B_{86}	B_{83}	B_{84}	C_{41}	C_{45}	C_{21}	C_{14}	C_{76}	C_{70}
B_{11}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}	B_{93}	B_{94}	B_{95}	B_{96}	C_{41}	C_{45}	C_{21}	C_{14}	C_{13}	C_{44}
B_{12}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{81}	B_{82}	B_{79}	B_{80}	C_{41}	C_{45}	C_{21}	C_{14}	C_{74}	C_{68}
B_{13}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{85}	B_{86}	B_{83}	B_{84}	B_{83}	B_{84}	B_{85}	B_{86}	B_{86}	B_{84}
B_{14}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	B_{79}	B_{80}	B_{81}	B_{82}	B_{81}	B_{82}	B_{79}	B_{80}	B_{80}	B_{82}
B_{15}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	B_{93}	B_{94}	B_{95}	B_{96}	B_{95}	B_{96}	B_{93}	B_{94}	B_{94}	B_{96}
B_{16}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	B_{83}	B_{84}	B_{85}	B_{86}	B_{85}	B_{86}	B_{83}	B_{84}	B_{84}	B_{86}
B_{17}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{95}	B_{96}	B_{93}	B_{94}	B_{93}	B_{94}	B_{95}	B_{96}	B_{96}	B_{94}
B_{18}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{81}	B_{82}	B_{79}	B_{80}	B_{79}	B_{80}	B_{81}	B_{82}	B_{82}	B_{80}
B_{19}	B_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}	C_{42}	C_{46}	C_{22}	C_{15}	B_{14}	B_{18}	B_{82}	B_{81}	C_{41}	C_{02}
B_{20}	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}	C_{42}	C_{46}	C_{22}	C_{15}	B_{82}	B_{81}	B_{14}	B_{18}	C_{68}	C_{74}
B_{21}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	C_{68}	C_{67}	C_{79}	C_{73}	B_{18}	B_{14}	B_{80}	B_{79}	C_{41}	C_{02}
B_{22}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	C_{68}	C_{67}	C_{79}	C_{73}	B_{80}	B_{79}	B_{18}	B_{14}	C_{42}	C_{11}
B_{23}	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}	C_{43}	C_{47}	C_{23}	C_{17}	B_{18}	B_{13}	B_{86}	B_{85}	C_{41}	C_{02}
B_{24}	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}	C_{43}	C_{47}	C_{23}	C_{17}	B_{86}	B_{85}	B_{18}	B_{13}	C_{70}	C_{76}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B_{01}	C_{72}	C_{83}	C_{78}	C_{84}	B_{92}	B_{94}	B_{95}	B_{96}	C_{44}	C_{14}	C_{20}	C_{48}	C_{17}	C_{24}	B_{96}	B_{94}
B_{02}	C_{47}	C_{19}	C_{16}	C_{23}	B_{85}	B_{86}	B_{83}	B_{84}	C_{70}	C_{76}	C_{69}	C_{82}	C_{75}	C_{81}	B_{84}	B_{86}
B_{03}	C_{46}	C_{18}	C_{15}	C_{22}	B_{81}	B_{82}	B_{79}	B_{80}	C_{68}	C_{74}	C_{67}	C_{80}	C_{73}	C_{79}	B_{80}	B_{82}
B_{04}	C_{67}	C_{80}	C_{73}	C_{79}	B_{79}	B_{80}	B_{81}	B_{82}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B_{82}	B_{80}
B_{05}	C_{48}	C_{20}	C_{17}	C_{24}	B_{95}	B_{96}	B_{93}	B_{94}	C_{71}	C_{77}	C_{72}	C_{83}	C_{78}	C_{84}	B_{94}	B_{96}
B_{06}	C_{69}	C_{82}	C_{75}	C_{81}	B_{83}	B_{84}	B_{85}	B_{86}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B_{86}	B_{84}
B_{07}	C_{83}	C_{72}	C_{84}	C_{78}	B_{93}	B_{94}	B_{95}	B_{96}	B_{96}	B_{94}	B_{95}	B_{93}	B_{17}	B_{15}	C_{44}	C_{13}
B_{08}	C_{18}	C_{46}	C_{22}	C_{15}	B_{81}	B_{82}	B_{79}	B_{80}	B_{80}	B_{82}	B_{79}	B_{81}	B_{14}	B_{18}	C_{68}	C_{74}
B_{09}	C_{19}	C_{47}	C_{23}	C_{16}	B_{85}	B_{86}	B_{83}	B_{84}	B_{84}	B_{86}	B_{83}	B_{85}	B_{16}	B_{13}	C_{70}	C_{76}
B_{10}	C_{82}	C_{69}	C_{81}	C_{75}	B_{83}	B_{84}	B_{85}	B_{86}	B_{86}	B_{84}	B_{85}	B_{83}	B_{13}	B_{16}	C_{43}	C_{12}
B_{11}	C_{20}	C_{48}	C_{24}	C_{17}	B_{95}	B_{96}	B_{93}	B_{94}	B_{94}	B_{96}	B_{93}	B_{95}	B_{15}	B_{17}	C_{71}	C_{77}
B_{12}	C_{80}	C_{67}	C_{79}	73	79	80	81	82	82	80	81	79	18	14	C_{42}	C_{11}
B_{13}	B_{85}	B_{83}	B_{13}	B_{16}	C_{41}	C_{45}	C_{21}	C_{14}	C_{76}	C_{70}	C_{82}	C_{69}	C_{81}	C_{75}	C_{12}	C_{43}
B_{14}	B_{79}	B_{81}	B_{14}	B_{18}	C_{41}	C_{45}	C_{21}	C_{14}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{14}	C_{68}
B_{15}	B_{93}	B_{95}	B_{15}	B_{17}	C_{41}	C_{45}	C_{21}	C_{14}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{77}	C_{71}
B_{16}	B_{83}	B_{85}	B_{16}	B_{13}	C_{41}	C_{45}	C_{21}	C_{14}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{76}	C_{70}
B_{17}	B_{95}	B_{93}	B_{17}	B_{15}	C_{41}	C_{45}	C_{21}	C_{14}	C_{77}	C_{71}	C_{83}	C_{72}	C_{84}	C_{78}	C_{13}	C_{44}
B_{18}	B_{81}	B_{79}	B_{18}	B_{14}	C_{41}	C_{45}	C_{21}	C_{14}	C_{74}	C_{68}	C_{80}	C_{67}	C_{79}	C_{73}	C_{11}	C_{42}
B_{19}	C_{45}	C_{03}	C_{14}	C_{21}	B_{82}	B_{81}	B_{14}	B_{18}	C_{68}	C_{74}	C_{67}	C_{80}	C_{73}	C_{79}	B_{18}	B_{81}
B_{20}	C_{67}	C_{80}	C_{73}	C_{79}	B_{14}	B_{18}	B_{82}	B_{81}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{81}	B_{18}
B_{21}	C_{45}	C_{03}	C_{14}	C_{21}	B_{80}	B_{79}	B_{18}	B_{14}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B_{14}	B_{79}
B_{22}	C_{46}	C_{18}	C_{15}	C_{22}	B_{18}	B_{14}	B_{80}	B_{79}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{79}	B_{14}
B_{23}	C_{45}	C_{03}	C_{14}	C_{21}	B_{86}	B_{85}	B_{16}	B_{13}	C_{70}	C_{76}	C_{69}	C_{82}	C_{75}	C_{81}	B_{13}	B_{85}
B_{24}	C_{69}	C_{82}	C_{75}	C_{81}	B_{16}	B_{13}	B_{86}	B_{85}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{85}	B_{13}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B_{01}	B_{95}	B_{93}	B_{17}	B_{15}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}
B_{02}	B_{83}	B_{85}	B_{16}	B_{13}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B_{03}	B_{79}	B_{81}	B_{14}	B_{18}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}
B_{04}	B_{81}	B_{79}	B_{18}	B_{14}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}
B_{05}	B_{93}	B_{95}	B_{15}	B_{17}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}
B_{06}	B_{85}	B_{83}	B_{13}	B_{16}	C_{40}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}
B_{07}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{08}	C_{67}	C_{80}	C_{73}	C_{79}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{09}	C_{69}	C_{82}	C_{75}	C_{81}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{10}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{11}	C_{72}	C_{83}	C_{78}	C_{84}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{12}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
B_{13}	C_{19}	C_{47}	C_{23}	C_{16}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B_{14}	C_{80}	C_{67}	C_{79}	C_{73}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}
B_{15}	C_{83}	C_{72}	C_{84}	C_{78}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}
B_{16}	C_{82}	C_{69}	C_{81}	C_{75}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}
B_{17}	C_{20}	C_{48}	C_{24}	C_{17}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}
B_{18}	C_{18}	C_{46}	C_{22}	C_{15}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}
B_{19}	B_{14}	B_{82}	B_{79}	B_{80}	C_{30}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}
B_{20}	B_{82}	B_{14}	B_{80}	B_{79}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}
B_{21}	B_{18}	B_{80}	B_{81}	B_{82}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}
B_{22}	B_{80}	B_{18}	B_{82}	B_{81}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}
B_{23}	B_{16}	B_{86}	B_{83}	B_{84}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}
B_{24}	B_{86}	B_{16}	B_{84}	B_{83}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B'_{01}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	C_{28}	C_{36}	C_{32}	C_{44}
B_{02}	C_{67}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	C_{52}	C_{58}	C_{51}	C_{70}
B_{03}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	C_{50}	C_{56}	C_{49}	C_{68}
B_{04}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	C_{26}	C_{34}	C_{30}	C_{42}
B_{05}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}	C_{53}	C_{59}	C_{54}	C_{71}
B_{06}	C_{50}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	C_{27}	C_{35}	C_{31}	C_{43}
B_{07}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{33}	B'_{31}	B'_{32}	B'_{29}
B_{08}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	B'_{13}	B'_{15}	B'_{11}	B'_{14}
B_{09}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	B'_{19}	B'_{21}	B'_{17}	B'_{20}
B_{10}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	B'_{21}	B'_{19}	B'_{20}	B'_{17}
B_{11}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}	B'_{31}	B'_{33}	B'_{29}	B'_{32}
B_{12}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{15}	B'_{13}	B'_{14}	B'_{11}
B_{13}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{58}	C_{52}	C_{70}	C_{51}
B_{14}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{34}	C_{26}	C_{42}	C_{30}
B_{15}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{36}	C_{28}	C_{44}	C_{32}
B_{16}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{35}	C_{27}	C_{43}	C_{31}
B_{17}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{59}	C_{53}	C_{71}	C_{54}
B_{18}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{56}	C_{50}	C_{68}	C_{49}
B_{19}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	C_{50}	C_{56}	C_{49}	C_{68}
B_{20}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	C_{25}	C_{33}	C_{29}	C_{41}
B_{21}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	C_{26}	C_{34}	C_{30}	C_{42}
B_{22}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	C_{25}	C_{33}	C_{29}	C_{41}
B_{23}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	C_{52}	C_{58}	C_{51}	C_{70}
B_{24}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	C_{25}	C_{33}	C_{29}	C_{41}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{01}	C_{40}	C_{48}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}	C_{01}	C_{02}	C_{03}	D_{01}	C_{65}	C_{06}	C_{07}	D_{04}
B_{02}	C_{57}	C_{69}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	C_{01}	C_{02}	C_{03}	D_{01}	C_{05}	C_{64}	C_{07}	D_{04}
B_{03}	C_{55}	C_{67}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	C_{01}	C_{02}	C_{03}	D_{01}	C_{04}	C_{62}	C_{07}	D_{04}
B_{04}	C_{38}	C_{46}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	C_{01}	C_{02}	C_{03}	D_{01}	C_{62}	C_{04}	C_{07}	D_{04}
B_{05}	C_{60}	C_{72}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}	C_{01}	C_{02}	C_{03}	D_{01}	C_{06}	C_{65}	C_{07}	D_{04}
B_{06}	C_{39}	C_{47}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	C_{01}	C_{02}	C_{03}	D_{01}	C_{64}	C_{05}	C_{07}	D_{04}
B_{07}	B'_{30}	B'_{28}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{01}	C_{02}	C_{03}	C_{65}	D_{01}	C_{06}	C_{07}	C_{66}
B_{08}	B'_{10}	B'_{12}	C_{50}	C_{56}	C_{49}	C_{69}	C_{55}	C_{67}	C_{01}	C_{02}	C_{03}	C_{04}	D_{01}	C_{62}	C_{07}	C_{08}
B_{09}	B'_{16}	B'_{18}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{01}	C_{02}	C_{03}	C_{05}	D_{01}	C_{64}	C_{07}	C_{09}
B_{10}	B'_{18}	B'_{16}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{44}	C_{01}	C_{02}	C_{03}	C_{64}	D_{01}	C_{05}	C_{07}	C_{63}
B_{11}	B'_{28}	B'_{30}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{01}	C_{02}	C_{03}	C_{06}	D_{01}	C_{65}	C_{07}	C_{10}
B_{12}	B'_{12}	B'_{10}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{01}	C_{02}	C_{03}	C_{62}	D_{01}	C_{04}	C_{07}	C_{61}
B_{13}	C_{69}	C_{57}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{01}	C_{02}	C_{03}	C_{64}	C_{05}	D_{01}	C_{07}	C_{63}
B_{14}	C_{46}	C_{38}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{01}	C_{02}	C_{03}	C_{04}	C_{62}	D_{01}	C_{07}	C_{08}
B_{15}	C_{48}	C_{40}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{01}	C_{02}	C_{03}	C_{06}	C_{65}	D_{01}	C_{07}	C_{10}
B_{16}	C_{47}	C_{39}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{01}	C_{02}	C_{03}	C_{05}	C_{64}	D_{01}	C_{07}	C_{09}
B_{17}	C_{72}	C_{60}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{01}	C_{02}	C_{03}	C_{65}	C_{06}	D_{01}	C_{07}	C_{66}
B_{18}	C_{67}	C_{55}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{01}	C_{02}	C_{03}	C_{62}	C_{04}	D_{01}	C_{07}	C_{61}
B_{19}	C_{55}	C_{67}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	C_{04}	C_{11}	C_{18}	D_{01}	C_{01}	C_{62}	C_{08}	D_{04}
B_{20}	C_{37}	C_{45}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	C_{04}	C_{11}	C_{18}	D_{01}	C_{62}	C_{01}	C_{08}	D_{04}
B_{21}	C_{38}	C_{46}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	C_{62}	C_{74}	C_{80}	D_{01}	C_{01}	C_{04}	C_{61}	D_{04}
B_{22}	C_{37}	C_{45}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	C_{62}	C_{74}	C_{80}	D_{01}	C_{04}	C_{01}	C_{61}	D_{04}
B_{23}	C_{57}	C_{69}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	C_{05}	C_{12}	C_{19}	D_{01}	C_{01}	C_{64}	C_{09}	D_{04}
B_{24}	C_{37}	C_{45}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	C_{05}	C_{12}	C_{19}	D_{01}	C_{64}	C_{01}	C_{09}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
B_{01}	C_{66}	C_{10}	D_{02}	C_{77}	C_{13}	C_{14}	D_{04}	C_{78}	C_{17}	D_{03}	C_{83}	C_{20}	C_{21}	D_{04}	C_{84}	C_{24}
B_{02}	C_{09}	C_{63}	D_{02}	C_{12}	C_{76}	C_{14}	D_{04}	C_{16}	C_{75}	D_{03}	C_{19}	C_{82}	C_{21}	D_{04}	C_{23}	C_{81}
B_{03}	C_{08}	C_{61}	D_{02}	C_{11}	C_{74}	C_{14}	D_{04}	C_{15}	C_{73}	D_{03}	C_{18}	C_{80}	C_{21}	D_{04}	C_{22}	C_{79}
B_{04}	C_{61}	C_{08}	D_{02}	C_{74}	C_{11}	C_{14}	D_{04}	C_{73}	C_{15}	D_{03}	C_{80}	C_{18}	C_{21}	D_{04}	C_{79}	C_{22}
B_{05}	C_{10}	C_{66}	D_{02}	C_{13}	C_{77}	C_{14}	D_{04}	C_{77}	C_{78}	D_{03}	C_{20}	C_{83}	C_{21}	D_{04}	C_{24}	C_{84}
B_{06}	C_{63}	C_{09}	D_{02}	C_{76}	C_{12}	C_{14}	D_{04}	C_{75}	C_{16}	D_{03}	C_{82}	C_{19}	C_{21}	D_{04}	C_{81}	C_{23}
B_{07}	D_{04}	C_{10}	C_{77}	D_{02}	C_{13}	C_{14}	C_{78}	D_{04}	C_{17}	C_{83}	D_{03}	C_{20}	C_{21}	C_{84}	D_{04}	C_{24}
B_{08}	D_{04}	C_{61}	C_{11}	D_{02}	C_{74}	C_{14}	C_{15}	D_{04}	C_{73}	C_{18}	D_{03}	C_{80}	C_{21}	C_{22}	D_{04}	C_{79}
B_{09}	D_{04}	C_{63}	C_{12}	D_{02}	C_{76}	C_{14}	C_{16}	D_{04}	C_{75}	C_{19}	D_{03}	C_{82}	C_{21}	C_{23}	D_{04}	C_{81}
B_{10}	D_{04}	C_{09}	C_{76}	D_{02}	C_{12}	C_{14}	C_{75}	D_{04}	C_{16}	C_{82}	D_{03}	C_{19}	C_{21}	C_{81}	D_{04}	C_{23}
B_{11}	D_{04}	C_{66}	C_{13}	D_{02}	C_{77}	C_{14}	C_{17}	D_{04}	C_{78}	C_{20}	D_{03}	C_{83}	C_{21}	C_{24}	D_{04}	C_{84}
B_{12}	D_{04}	C_{08}	C_{74}	D_{02}	C_{11}	C_{14}	C_{73}	D_{04}	C_{15}	C_{80}	D_{03}	C_{18}	C_{21}	C_{79}	D_{04}	C_{22}
B_{13}	C_{09}	D_{04}	C_{76}	C_{12}	D_{02}	C_{14}	C_{75}	C_{16}	D_{04}	C_{82}	C_{19}	D_{03}	C_{21}	C_{81}	C_{23}	D_{04}
B_{14}	C_{61}	D_{04}	C_{11}	C_{74}	D_{02}	C_{14}	C_{15}	C_{73}	D_{04}	C_{18}	C_{80}	D_{03}	C_{21}	C_{22}	C_{79}	D_{04}
B_{15}	C_{66}	D_{04}	C_{13}	C_{77}	D_{02}	C_{14}	C_{17}	C_{78}	D_{04}	C_{20}	C_{83}	D_{03}	C_{21}	C_{24}	C_{84}	D_{04}
B_{16}	C_{63}	D_{04}	C_{12}	C_{76}	D_{02}	C_{14}	C_{16}	C_{75}	D_{04}	C_{19}	C_{82}	D_{03}	C_{21}	C_{23}	C_{81}	D_{04}
B_{17}	C_{10}	D_{04}	C_{77}	C_{13}	D_{02}	C_{14}	C_{78}	C_{17}	D_{04}	C_{83}	C_{20}	D_{03}	C_{21}	C_{84}	C_{24}	D_{04}
B_{18}	C_{08}	D_{04}	C_{74}	C_{11}	D_{02}	C_{14}	C_{73}	C_{15}	D_{04}	C_{80}	C_{18}	D_{03}	C_{21}	C_{79}	C_{22}	D_{04}
B_{19}	C_{07}	C_{61}	D_{02}	C_{02}	C_{74}	C_{15}	D_{04}	C_{14}	C_{73}	D_{03}	C_{03}	C_{80}	C_{22}	D_{04}	C_{21}	C_{79}
B_{20}	C_{61}	C_{07}	D_{02}	C_{74}	C_{02}	C_{15}	D_{04}	C_{73}	C_{14}	D_{03}	C_{80}	C_{03}	C_{22}	D_{04}	C_{79}	C_{21}
B_{21}	C_{07}	C_{08}	D_{02}	C_{02}	C_{11}	C_{73}	D_{04}	C_{14}	C_{15}	D_{03}	C_{03}	C_{18}	C_{79}	D_{04}	C_{21}	C_{22}
B_{22}	C_{08}	C_{07}	D_{02}	C_{11}	C_{02}	C_{73}	D_{04}	C_{15}	C_{14}	D_{03}	C_{18}	C_{03}	C_{79}	D_{04}	C_{22}	C_{21}
B_{23}	C_{07}	C_{63}	D_{02}	C_{02}	C_{76}	C_{16}	D_{04}	C_{14}	C_{75}	D_{03}	C_{03}	C_{82}	C_{23}	D_{04}	C_{21}	C_{81}
B_{24}	C_{63}	C_{07}	D_{02}	C_{76}	C_{02}	C_{16}	D_{04}	C_{75}	C_{14}	D_{03}	C_{82}	C_{03}	C_{23}	D_{04}	C_{81}	C_{21}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B_{01}	C_{25}	D_{01}	C_{53}	C_{28}	C_{29}	D_{02}	C_{54}	C_{32}	C_{33}	D_{01}	C_{59}	C_{36}	C_{37}	D_{03}	C_{60}	C_{40}
B_{02}	C_{25}	D_{01}	C_{27}	C_{52}	C_{29}	D_{02}	C_{31}	C_{51}	C_{33}	D_{01}	C_{35}	C_{58}	C_{37}	D_{03}	C_{39}	C_{57}
B_{03}	C_{25}	D_{01}	C_{26}	C_{50}	C_{29}	D_{02}	C_{30}	C_{49}	C_{33}	D_{01}	C_{34}	C_{56}	C_{37}	D_{03}	C_{38}	C_{55}
B_{04}	C_{25}	D_{01}	C_{50}	C_{26}	C_{29}	D_{02}	C_{49}	C_{30}	C_{33}	D_{01}	C_{56}	C_{34}	C_{37}	D_{03}	C_{55}	C_{38}
B_{05}	C_{25}	D_{01}	C_{28}	C_{53}	C_{29}	D_{02}	C_{32}	C_{54}	C_{33}	D_{01}	C_{36}	C_{59}	C_{37}	D_{03}	C_{40}	C_{60}
B_{06}	C_{25}	D_{01}	C_{52}	C_{27}	C_{29}	D_{02}	C_{51}	C_{31}	C_{33}	D_{01}	C_{58}	C_{35}	C_{37}	D_{03}	C_{57}	C_{39}
B_{07}	C_{25}	C_{53}	D_{01}	C_{28}	C_{29}	C_{54}	D_{02}	C_{32}	C_{33}	C_{59}	D_{01}	C_{36}	C_{37}	C_{60}	D_{03}	C_{40}
B_{08}	C_{25}	C_{26}	D_{01}	C_{50}	C_{29}	C_{30}	D_{02}	C_{49}	C_{33}	C_{34}	D_{01}	C_{56}	C_{37}	C_{38}	D_{03}	C_{55}
B_{09}	C_{25}	C_{27}	D_{01}	C_{52}	C_{29}	C_{31}	D_{02}	C_{51}	C_{33}	C_{35}	D_{01}	C_{58}	C_{37}	C_{39}	D_{03}	C_{57}
B_{10}	C_{25}	C_{52}	D_{01}	C_{27}	C_{29}	C_{51}	D_{02}	C_{31}	C_{33}	C_{58}	D_{01}	C_{35}	C_{37}	C_{57}	D_{03}	C_{39}
B_{11}	C_{25}	C_{28}	D_{01}	C_{53}	C_{29}	C_{32}	D_{02}	C_{54}	C_{33}	C_{36}	D_{01}	C_{59}	C_{37}	C_{40}	D_{03}	C_{60}
B_{12}	C_{25}	C_{50}	D_{01}	C_{26}	C_{29}	C_{49}	D_{02}	C_{30}	C_{33}	C_{56}	D_{01}	C_{34}	C_{37}	C_{55}	D_{03}	C_{38}
B_{13}	C_{25}	C_{52}	C_{27}	D_{01}	C_{29}	C_{51}	C_{31}	D_{02}	C_{33}	C_{58}	C_{35}	D_{01}	C_{37}	C_{57}	C_{39}	D_{03}
B_{14}	C_{25}	C_{26}	C_{50}	D_{01}	C_{25}	C_{30}	C_{49}	D_{02}	C_{33}	C_{34}	C_{56}	D_{01}	C_{37}	C_{38}	C_{55}	D_{03}
B_{15}	C_{25}	C_{28}	C_{53}	D_{01}	C_{29}	C_{32}	C_{54}	D_{02}	C_{33}	C_{36}	C_{59}	D_{01}	C_{37}	C_{40}	C_{60}	D_{03}
B_{16}	C_{25}	C_{27}	C_{52}	D_{01}	C_{29}	C_{31}	C_{51}	D_{02}	C_{33}	C_{35}	C_{58}	D_{01}	C_{37}	C_{39}	C_{57}	D_{03}
B_{17}	C_{25}	C_{53}	C_{28}	D_{01}	C_{29}	C_{54}	C_{32}	D_{02}	C_{33}	C_{59}	C_{36}	D_{01}	C_{37}	C_{60}	C_{40}	D_{03}
B_{18}	C_{25}	C_{50}	C_{26}	D_{01}	C_{29}	C_{49}	C_{30}	D_{02}	C_{33}	C_{56}	C_{34}	D_{01}	C_{37}	C_{55}	C_{38}	D_{03}
B_{19}	C_{26}	D_{01}	C_{25}	C_{50}	C_{30}	D_{02}	C_{29}	C_{49}	C_{34}	D_{01}	C_{33}	C_{56}	C_{38}	D_{03}	C_{37}	C_{55}
B_{20}	C_{26}	D_{01}	C_{50}	C_{25}	C_{30}	D_{02}	C_{49}	C_{29}	C_{34}	D_{01}	C_{56}	C_{33}	C_{38}	D_{03}	C_{55}	C_{37}
B_{21}	C_{50}	D_{01}	C_{25}	C_{26}	C_{49}	D_{02}	C_{29}	C_{30}	C_{56}	D_{01}	C_{33}	C_{34}	C_{55}	D_{03}	C_{37}	C_{38}
B_{22}	C_{50}	D_{01}	C_{26}	C_{25}	C_{49}	D_{02}	C_{30}	C_{29}	C_{56}	D_{01}	C_{34}	C_{33}	C_{55}	D_{03}	C_{38}	C_{37}
B_{23}	C_{27}	D_{01}	C_{25}	C_{52}	C_{31}	D_{02}	C_{29}	C_{51}	C_{35}	D_{01}	C_{33}	C_{58}	C_{39}	D_{03}	C_{37}	C_{57}
B_{24}	C_{27}	D_{01}	C_{52}	C_{25}	C_{31}	D_{02}	C_{51}	C_{29}	C_{35}	D_{01}	C_{58}	C_{33}	C_{39}	D_{03}	C_{57}	C_{37}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
B_{01}	C_{41}	D_{02}	C_{71}	C_{44}	C_{45}	D_{03}	C_{72}	C_{48}	C_{25}	C_{29}	C_{32}	C_{28}	C_{53}	C_{54}	C_{33}	C_{37}
B_{02}	C_{41}	D_{02}	C_{43}	C_{70}	C_{45}	D_{03}	C_{47}	C_{69}	C_{25}	C_{29}	C_{51}	C_{52}	C_{27}	C_{31}	C_{33}	C_{37}
B_{03}	C_{41}	D_{02}	C_{42}	C_{68}	C_{45}	D_{03}	C_{46}	C_{67}	C_{25}	C_{29}	C_{49}	C_{50}	C_{26}	C_{30}	C_{33}	C_{37}
B_{04}	C_{41}	D_{02}	C_{68}	C_{42}	C_{45}	D_{03}	C_{67}	C_{46}	C_{25}	C_{29}	C_{30}	C_{26}	C_{50}	C_{49}	C_{33}	C_{37}
B_{05}	C_{41}	D_{02}	C_{44}	C_{71}	C_{45}	D_{03}	C_{48}	C_{72}	C_{25}	C_{29}	C_{54}	C_{53}	C_{28}	C_{32}	C_{33}	C_{37}
B_{06}	C_{41}	D_{02}	C_{70}	C_{43}	C_{45}	D_{03}	C_{69}	C_{47}	C_{25}	C_{29}	C_{31}	C_{27}	C_{52}	C_{51}	C_{33}	C_{37}
B_{07}	C_{41}	C_{71}	D_{02}	C_{44}	C_{45}	C_{72}	D_{03}	C_{48}	C_{37}	C_{28}	C_{25}	C_{29}	C_{53}	C_{54}	C_{40}	C_{36}
B_{08}	C_{41}	C_{42}	D_{02}	C_{68}	C_{45}	C_{46}	D_{03}	C_{67}	C_{49}	C_{50}	C_{25}	C_{29}	C_{26}	C_{30}	C_{55}	C_{56}
B_{09}	C_{41}	C_{43}	D_{02}	C_{70}	C_{45}	C_{47}	D_{03}	C_{69}	C_{51}	C_{52}	C_{25}	C_{29}	C_{27}	C_{31}	C_{57}	C_{58}
B_{10}	C_{41}	C_{70}	D_{02}	C_{43}	C_{45}	C_{69}	D_{03}	C_{47}	C_{31}	C_{27}	C_{25}	C_{29}	C_{52}	C_{51}	C_{39}	C_{35}
B_{11}	C_{41}	C_{44}	D_{02}	C_{71}	C_{45}	C_{48}	D_{03}	C_{72}	C_{54}	C_{53}	C_{25}	C_{29}	C_{28}	C_{37}	C_{60}	C_{59}
B_{12}	C_{41}	C_{68}	D_{02}	C_{42}	C_{45}	C_{67}	D_{03}	C_{46}	C_{30}	C_{26}	C_{25}	C_{29}	C_{50}	C_{49}	C_{38}	C_{34}
B_{13}	C_{41}	C_{70}	C_{43}	D_{02}	C_{45}	C_{69}	C_{47}	D_{03}	C_{31}	C_{27}	C_{51}	C_{52}	C_{29}	C_{25}	C_{39}	C_{35}
B_{14}	C_{41}	C_{42}	C_{68}	D_{02}	C_{45}	C_{46}	C_{67}	D_{03}	C_{49}	C_{50}	C_{30}	C_{26}	C_{29}	C_{25}	C_{55}	C_{56}
B_{15}	C_{41}	C_{44}	C_{71}	D_{02}	C_{45}	C_{48}	C_{72}	D_{03}	C_{54}	C_{53}	C_{32}	C_{28}	C_{29}	C_{25}	C_{60}	C_{59}
B_{16}	C_{41}	C_{43}	C_{70}	D_{02}	C_{45}	C_{47}	C_{69}	D_{03}	C_{51}	C_{52}	C_{31}	C_{27}	C_{29}	C_{25}	C_{57}	C_{58}
B_{17}	C_{41}	C_{71}	C_{44}	D_{02}	C_{45}	C_{48}	C_{72}	D_{03}	C_{32}	C_{28}	C_{54}	C_{53}	C_{29}	C_{25}	C_{40}	C_{36}
B_{18}	C_{41}	C_{68}	C_{42}	D_{02}	C_{45}	C_{67}	C_{46}	D_{03}	C_{30}	C_{26}	C_{49}	C_{50}	C_{29}	C_{25}	C_{38}	C_{34}
B_{19}	C_{42}	D_{02}	C_{41}	C_{68}	C_{46}	D_{03}	C_{45}	C_{67}	C_{26}	C_{30}	C_{49}	C_{50}	C_{25}	C_{29}	C_{34}	C_{38}
B_{20}	C_{42}	D_{02}	C_{68}	C_{41}	C_{46}	D_{03}	C_{67}	C_{45}	C_{26}	C_{30}	C_{29}	C_{25}	C_{50}	C_{49}	C_{34}	C_{38}
B_{21}	C_{68}	D_{02}	C_{41}	C_{42}	C_{67}	D_{03}	C_{45}	C_{46}	C_{50}	C_{49}	C_{30}	C_{26}	C_{25}	C_{29}	C_{56}	C_{55}
B_{22}	C_{68}	D_{02}	C_{42}	C_{41}	C_{67}	D_{03}	C_{46}	C_{45}	C_{50}	C_{49}	C_{29}	C_{25}	C_{26}	C_{30}	C_{56}	C_{55}
B_{23}	C_{43}	D_{02}	C_{41}	C_{70}	C_{47}	D_{03}	C_{45}	C_{69}	C_{27}	C_{31}	C_{51}	C_{52}	C_{25}	C_{29}	C_{35}	C_{39}
B_{24}	C_{43}	D_{02}	C_{70}	C_{41}	C_{47}	D_{03}	C_{69}	C_{45}	C_{27}	C_{31}	C_{29}	C_{25}	C_{52}	C_{51}	C_{35}	C_{39}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
B_{01}	c_{40}	c_{36}	c_{59}	c_{60}	c_{01}	c_{07}	c_{10}	c_{06}	c_{65}	c_{66}	c_{41}	c_{45}	c_{48}	c_{44}	c_{71}	c_{72}
B_{02}	c_{57}	c_{58}	c_{35}	c_{39}	c_{01}	c_{07}	c_{63}	c_{64}	c_{05}	c_{09}	c_{41}	c_{45}	c_{69}	c_{70}	c_{43}	c_{47}
B_{03}	c_{55}	c_{56}	c_{34}	c_{38}	c_{01}	c_{07}	c_{61}	c_{62}	c_{04}	c_{08}	c_{41}	c_{45}	c_{67}	c_{68}	c_{42}	c_{46}
B_{04}	c_{38}	c_{34}	c_{56}	c_{55}	c_{01}	c_{07}	c_{08}	c_{04}	c_{62}	c_{61}	c_{41}	c_{45}	c_{46}	c_{42}	c_{68}	c_{67}
B_{05}	c_{60}	c_{59}	c_{36}	c_{40}	c_{01}	c_{07}	c_{66}	c_{65}	c_{06}	c_{10}	c_{41}	c_{45}	c_{72}	c_{71}	c_{44}	c_{48}
B_{06}	c_{39}	c_{35}	c_{58}	c_{57}	c_{01}	c_{07}	c_{09}	c_{05}	c_{64}	c_{63}	c_{41}	c_{45}	c_{47}	c_{43}	c_{70}	c_{69}
B_{07}	c_{33}	c_{37}	c_{59}	c_{60}	c_{10}	c_{06}	c_{01}	c_{07}	c_{65}	c_{66}	c_{48}	c_{44}	c_{41}	c_{45}	c_{71}	c_{72}
B_{08}	c_{33}	c_{37}	c_{34}	c_{38}	c_{61}	c_{62}	c_{01}	c_{07}	c_{04}	c_{08}	c_{67}	c_{68}	c_{41}	c_{45}	c_{42}	c_{46}
B_{09}	c_{33}	c_{37}	c_{35}	c_{39}	c_{63}	c_{64}	c_{01}	c_{07}	c_{05}	c_{09}	c_{69}	c_{70}	c_{41}	c_{45}	c_{43}	c_{47}
B_{10}	c_{33}	c_{37}	c_{58}	c_{57}	c_{09}	c_{05}	c_{01}	c_{07}	c_{64}	c_{63}	c_{47}	c_{43}	c_{41}	c_{45}	c_{70}	c_{69}
B_{11}	c_{33}	c_{37}	c_{36}	c_{40}	c_{66}	c_{65}	c_{01}	c_{07}	c_{06}	c_{10}	c_{72}	c_{71}	c_{41}	c_{45}	c_{44}	c_{48}
B_{12}	c_{33}	c_{37}	c_{56}	c_{55}	c_{08}	c_{04}	c_{01}	c_{07}	c_{62}	c_{61}	c_{46}	c_{42}	c_{41}	c_{45}	c_{68}	c_{67}
B_{13}	c_{57}	c_{58}	c_{37}	c_{33}	c_{09}	c_{05}	c_{63}	c_{64}	c_{07}	c_{01}	c_{47}	c_{48}	c_{69}	c_{70}	c_{45}	c_{41}
B_{14}	c_{38}	c_{34}	c_{37}	c_{33}	c_{61}	c_{62}	c_{08}	c_{04}	c_{07}	c_{01}	c_{67}	c_{68}	c_{46}	c_{42}	c_{45}	c_{41}
B_{15}	c_{40}	c_{36}	c_{37}	c_{33}	c_{66}	c_{65}	c_{10}	c_{06}	c_{07}	c_{01}	c_{72}	c_{71}	c_{48}	c_{44}	c_{45}	c_{41}
B_{16}	c_{39}	c_{35}	c_{37}	c_{33}	c_{63}	c_{64}	c_{09}	c_{05}	c_{07}	c_{01}	c_{69}	c_{70}	c_{47}	c_{48}	c_{45}	c_{41}
B_{17}	c_{60}	c_{59}	c_{37}	c_{33}	c_{10}	c_{06}	c_{66}	c_{65}	c_{07}	c_{01}	c_{48}	c_{44}	c_{72}	c_{71}	c_{45}	c_{41}
B_{18}	c_{55}	c_{56}	c_{37}	c_{33}	c_{08}	c_{04}	c_{61}	c_{62}	c_{07}	c_{01}	c_{46}	c_{42}	c_{67}	c_{68}	c_{45}	c_{41}
B_{19}	c_{55}	c_{56}	c_{33}	c_{37}	c_{04}	c_{08}	c_{61}	c_{62}	c_{01}	c_{07}	c_{42}	c_{46}	c_{67}	c_{68}	c_{41}	c_{45}
B_{20}	c_{37}	c_{33}	c_{56}	c_{55}	c_{04}	c_{08}	c_{07}	c_{01}	c_{62}	c_{61}	c_{42}	c_{46}	c_{45}	c_{41}	c_{68}	c_{67}
B_{21}	c_{38}	c_{34}	c_{33}	c_{37}	c_{62}	c_{61}	c_{08}	c_{04}	c_{01}	c_{07}	c_{68}	c_{67}	c_{46}	c_{42}	c_{41}	c_{45}
B_{22}	c_{37}	c_{33}	c_{34}	c_{38}	c_{62}	c_{61}	c_{07}	c_{01}	c_{04}	c_{08}	c_{68}	c_{67}	c_{45}	c_{41}	c_{42}	c_{46}
B_{23}	c_{57}	c_{58}	c_{33}	c_{37}	c_{05}	c_{09}	c_{63}	c_{64}	c_{01}	c_{07}	c_{48}	c_{47}	c_{69}	c_{70}	c_{41}	c_{45}
B_{24}	c_{37}	c_{33}	c_{58}	c_{57}	c_{05}	c_{09}	c_{07}	c_{01}	c_{64}	c_{63}	c_{48}	c_{47}	c_{45}	c_{41}	c_{70}	c_{69}

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{01}	C_{02}	C_{14}	C_{17}	C_{13}	C_{77}	C_{78}	C_{03}	C_{21}	C_{24}	C_{20}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{02}	C_{02}	C_{14}	C_{75}	C_{76}	C_{12}	C_{16}	C_{03}	C_{21}	C_{81}	C_{82}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{03}	C_{02}	C_{14}	C_{73}	C_{74}	C_{11}	C_{15}	C_{03}	C_{21}	C_{79}	C_{80}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{04}	C_{02}	C_{14}	C_{15}	C_{11}	C_{74}	C_{73}	C_{03}	C_{21}	C_{22}	C_{18}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B_{05}	C_{02}	C_{14}	C_{78}	C_{77}	C_{13}	C_{17}	C_{03}	C_{21}	C_{84}	C_{83}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{06}	C_{02}	C_{14}	C_{16}	C_{12}	C_{76}	C_{75}	C_{03}	C_{21}	C_{23}	C_{19}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B_{07}	C_{17}	C_{13}	C_{02}	C_{14}	C_{77}	C_{78}	C_{24}	C_{20}	C_{03}	C_{21}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{08}	C_{73}	C_{74}	C_{02}	C_{14}	C_{11}	C_{15}	C_{79}	C_{80}	C_{03}	C_{21}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{09}	C_{75}	C_{76}	C_{02}	C_{14}	C_{12}	C_{16}	C_{81}	C_{82}	C_{03}	C_{21}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{10}	C_{16}	C_{12}	C_{02}	C_{14}	C_{76}	C_{75}	C_{23}	C_{19}	C_{03}	C_{21}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B_{11}	C_{78}	C_{77}	C_{02}	C_{14}	C_{13}	C_{17}	C_{84}	C_{83}	C_{03}	C_{21}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{12}	C_{15}	C_{11}	C_{02}	C_{14}	C_{74}	C_{73}	C_{22}	C_{18}	C_{03}	C_{21}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B_{13}	C_{16}	C_{12}	C_{75}	C_{76}	C_{14}	C_{02}	C_{23}	C_{19}	C_{81}	C_{82}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{14}	C_{73}	C_{74}	C_{15}	C_{11}	C_{14}	C_{02}	C_{79}	C_{80}	C_{22}	C_{18}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{15}	C_{78}	C_{77}	C_{17}	C_{13}	C_{14}	C_{02}	C_{84}	C_{83}	C_{24}	C_{20}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{16}	C_{75}	C_{76}	C_{16}	C_{12}	C_{14}	C_{02}	C_{81}	C_{82}	C_{23}	C_{19}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{17}	C_{17}	C_{13}	C_{78}	C_{77}	C_{14}	C_{02}	C_{24}	C_{20}	C_{84}	C_{83}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{18}	C_{15}	C_{11}	C_{73}	C_{74}	C_{14}	C_{02}	C_{22}	C_{18}	C_{79}	C_{80}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B_{19}	C_{11}	C_{15}	C_{73}	C_{74}	C_{02}	C_{14}	C_{18}	C_{22}	C_{79}	C_{80}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{20}	C_{11}	C_{15}	C_{14}	C_{02}	C_{74}	C_{73}	C_{18}	C_{22}	C_{21}	C_{03}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B_{21}	C_{74}	C_{73}	C_{15}	C_{11}	C_{02}	C_{14}	C_{80}	C_{79}	C_{22}	C_{18}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{22}	C_{74}	C_{73}	C_{14}	C_{02}	C_{11}	C_{15}	C_{80}	C_{79}	C_{21}	C_{03}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{23}	C_{12}	C_{16}	C_{75}	C_{76}	C_{02}	C_{14}	C_{19}	C_{23}	C_{81}	C_{82}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{24}	C_{12}	C_{16}	C_{14}	C_{02}	C_{76}	C_{75}	C_{19}	C_{23}	C_{21}	C_{03}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{25}	B_{25}	B_{51}	B_{26}	B_{85}	B_{52}	B_{86}	B'_{20}	B_{10}	B'_{18}	B_{06}	B'_{21}	B_{13}	B'_{16}	B_{02}	B'_{19}	B_{16}
B_{26}	B_{26}	B_{52}	B_{25}	B_{86}	B_{51}	B_{85}	B'_{21}	B_{54}	B'_{19}	B_{24}	B'_{20}	B_{84}	B'_{17}	B_{23}	B'_{18}	B_{83}
B_{27}	B_{27}	B_{57}	B_{29}	B_{87}	B_{59}	B_{89}	B'_{22}	B_{58}	B'_{23}	B_{28}	B'_{24}	B_{88}	B'_{25}	B_{30}	B'_{26}	B_{90}
B_{28}	B_{28}	B_{58}	B_{30}	B_{88}	B_{60}	B_{90}	B'_{23}	B_{57}	B'_{22}	B_{27}	B'_{25}	B_{87}	B'_{24}	B_{29}	B'_{27}	B_{89}
B_{29}	B_{29}	B_{59}	B_{27}	B_{89}	B_{57}	B_{87}	B'_{24}	B_{61}	B'_{26}	B_{31}	B'_{22}	B_{91}	B'_{27}	B_{32}	B'_{23}	B_{92}
B_{30}	B_{30}	B_{60}	B_{28}	B_{90}	B_{58}	B_{88}	B'_{25}	B_{62}	B'_{27}	B_{32}	B'_{23}	B_{92}	B'_{26}	B_{31}	B'_{22}	B_{91}
B_{31}	B_{31}	B_{61}	B_{32}	B_{91}	B_{62}	B_{92}	B'_{26}	B_{59}	B'_{24}	B_{29}	B'_{27}	B_{89}	B'_{22}	B_{27}	B'_{25}	B_{87}
B_{32}	B_{32}	B_{62}	B_{31}	B_{92}	B_{61}	B_{91}	B'_{27}	B_{60}	B'_{25}	B_{30}	B'_{26}	B_{90}	B'_{23}	B_{28}	B'_{24}	B_{88}
B_{33}	B_{33}	B_{63}	B_{34}	B_{93}	B_{64}	B_{94}	B'_{29}	B_{11}	B'_{28}	B_{05}	B'_{31}	B_{15}	B'_{30}	B_{01}	B'_{33}	B_{17}
B_{34}	B_{34}	B_{64}	B_{33}	B_{94}	B_{63}	B_{93}	B'_{31}	B_{66}	B'_{33}	B_{36}	B'_{29}	B_{96}	B'_{32}	B_{35}	B'_{28}	B_{95}
B_{35}	B_{35}	B_{65}	B_{36}	B_{95}	B_{66}	B_{96}	B'_{32}	B_{07}	B'_{30}	B_{01}	B'_{33}	B_{17}	B'_{28}	B_{05}	B'_{31}	B_{15}
B_{36}	B_{36}	B_{66}	B_{35}	B_{96}	B_{65}	B_{95}	B'_{33}	B_{64}	B'_{31}	B_{34}	B'_{32}	B_{94}	B'_{29}	B_{33}	B'_{30}	B_{93}
B_{37}	B_{37}	B_{67}	B_{39}	B_{97}	B_{69}	B_{99}	B'_{34}	B_{68}	B'_{35}	B_{38}	B'_{36}	B_{98}	B'_{37}	B_{40}	B'_{38}	B'_{01}
B_{38}	B_{38}	B_{68}	B_{40}	B_{98}	B_{70}	B'_{01}	B'_{35}	B_{67}	B'_{34}	B_{37}	B'_{37}	B_{97}	B'_{36}	B_{39}	B'_{39}	B_{99}
B_{39}	B_{39}	B_{69}	B_{37}	B_{99}	B_{67}	B_{97}	B'_{36}	B_{71}	B'_{38}	B_{41}	B'_{34}	B'_{02}	B_{39}	B_{42}	B'_{35}	B'_{03}
B_{40}	B_{40}	B_{70}	B_{38}	B'_{01}	B_{68}	B_{98}	B'_{37}	B_{72}	B'_{39}	B_{42}	B'_{35}	B'_{03}	B'_{38}	B_{41}	B'_{34}	B'_{02}
B_{41}	B_{41}	B_{71}	B_{42}	B'_{02}	B_{72}	B'_{03}	B'_{38}	B_{69}	B'_{36}	B_{39}	B'_{39}	B_{99}	B'_{34}	B_{37}	B'_{37}	B_{97}
B_{42}	B_{42}	B_{72}	B_{41}	B'_{03}	B_{71}	B'_{02}	B'_{39}	B_{70}	B'_{37}	B_{40}	B'_{38}	B'_{01}	B'_{35}	B_{38}	B'_{36}	B_{98}
B_{43}	B_{43}	B_{73}	B_{45}	B'_{04}	B_{75}	B'_{06}	B'_{40}	B_{74}	B'_{41}	B_{44}	B'_{42}	B'_{05}	B'_{43}	B_{46}	B'_{44}	B'_{07}
B_{44}	B_{44}	B_{74}	B_{46}	B'_{05}	B_{76}	B'_{07}	B'_{41}	B_{73}	B'_{40}	B_{43}	B'_{43}	B'_{04}	B'_{42}	B_{45}	B'_{45}	B'_{06}
B_{45}	B_{45}	B_{75}	B_{43}	B'_{06}	B_{73}	B'_{04}	B'_{42}	B_{77}	B'_{44}	B_{47}	B'_{40}	B'_{08}	B'_{45}	B_{48}	B'_{41}	B'_{09}
B_{46}	B_{46}	B_{76}	B_{44}	B'_{07}	B_{74}	B'_{05}	B'_{43}	B_{78}	B'_{45}	B_{48}	B'_{41}	B'_{09}	B'_{44}	B_{47}	B'_{40}	B'_{08}
B_{47}	B_{47}	B_{77}	B_{48}	B'_{08}	B_{78}	B'_{09}	B'_{44}	B_{75}	B'_{42}	B_{45}	B'_{45}	B'_{06}	B'_{40}	B_{43}	B'_{43}	B'_{04}
B_{48}	B_{48}	B_{78}	B_{47}	B'_{09}	B_{77}	B'_{08}	B'_{45}	B_{76}	B'_{43}	B_{46}	B'_{44}	B'_{07}	B'_{41}	B_{44}	B'_{42}	B'_{05}

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
B_{25}	B'_{17}	B_{09}	B_{54}	B_{24}	B_{84}	B_{83}	B_{23}	B_{53}	B_{25}	B_{25}	C_{64}	C_{76}	B_{26}	B_{26}	B_{51}	C_{64}
B_{26}	B''_{16}	B_{53}	B_{10}	B_{06}	B_{13}	B_{16}	B_{02}	B_{09}	B_{26}	B_{26}	C_{64}	C_{76}	B_{25}	B_{25}	B_{52}	C_{64}
B_{27}	B'_{27}	B_{60}	B_{61}	B_{31}	B_{91}	B_{92}	B_{32}	B_{62}	B_{27}	B_{27}	C_{04}	C_{11}	B_{29}	B_{29}	B_{57}	C_{04}
B_{28}	B'_{26}	B_{59}	B_{62}	B_{32}	B_{92}	B_{91}	B_{31}	B_{61}	B_{28}	B_{28}	C_{05}	C_{12}	B_{30}	B_{30}	B_{58}	C_{05}
B_{29}	B'_{25}	B_{62}	B_{58}	B_{28}	B_{88}	B_{90}	B_{30}	B_{60}	B_{29}	B_{29}	C_{04}	C_{11}	B_{27}	B_{27}	B_{59}	C_{04}
B_{30}	B'_{24}	B_{61}	B_{57}	B_{27}	B_{87}	B_{89}	B_{29}	B_{59}	B_{30}	B_{30}	C_{05}	C_{12}	B_{28}	B_{28}	B_{60}	C_{05}
B_{31}	B'_{23}	B_{57}	B_{60}	B_{30}	B_{90}	B_{88}	B_{28}	B_{58}	B_{31}	B_{31}	C_{66}	C_{78}	B_{32}	B_{32}	B_{61}	C_{66}
B_{32}	B'_{22}	B_{58}	B_{59}	B_{29}	B_{89}	B_{87}	B_{27}	B_{57}	B_{32}	B_{32}	C_{66}	C_{78}	B_{31}	B_{31}	B_{62}	C_{66}
B_{33}	B'_{32}	B_{07}	B_{66}	B_{36}	B_{96}	B_{95}	B_{35}	B_{65}	B_{33}	B_{33}	C_{06}	C_{13}	B_{34}	B_{34}	B_{63}	C_{06}
B_{34}	B'_{30}	B_{65}	B_{11}	B_{05}	B_{15}	B_{17}	B_{01}	B_{07}	B_{34}	B_{34}	C_{06}	C_{13}	B_{33}	B_{33}	B_{64}	C_{06}
B_{35}	B'_{29}	B_{11}	B_{64}	B_{34}	B_{94}	B_{93}	B_{33}	B_{63}	B_{35}	B_{35}	C_{65}	C_{77}	B_{36}	B_{36}	B_{65}	C_{65}
B_{36}	B'_{28}	B_{63}	B_{07}	B_{01}	B_{17}	B_{15}	B_{05}	B_{11}	B_{36}	B_{36}	C_{65}	C_{77}	B_{35}	B_{35}	B_{66}	C_{65}
B_{37}	B'_{39}	B_{70}	B_{71}	B_{41}	B'_{02}	B'_{03}	B_{42}	B_{72}	B_{37}	B_{37}	C_{04}	C_{11}	B_{39}	B_{39}	B_{67}	C_{04}
B_{38}	B'_{38}	B_{69}	B_{72}	B_{42}	B'_{03}	B'_{02}	B_{41}	B_{71}	B_{38}	B_{38}	C_{06}	C_{13}	B_{40}	B_{40}	B_{68}	C_{06}
B_{39}	B'_{37}	B_{72}	B_{68}	B_{38}	B_{99}	B'_{01}	B_{40}	B_{70}	B_{39}	B_{39}	C_{04}	C_{11}	B_{37}	B_{37}	B_{69}	C_{04}
B_{40}	B'_{36}	B_{71}	B_{67}	B_{37}	B_{97}	B_{99}	B_{39}	B_{69}	B_{40}	B_{40}	C_{06}	C_{13}	B_{38}	B_{38}	B_{70}	C_{06}
B_{41}	B'_{35}	B_{67}	B_{70}	B_{40}	B'_{01}	B_{98}	B_{38}	B_{68}	B_{41}	B_{41}	C_{63}	C_{75}	B_{42}	B_{42}	B_{71}	C_{63}
B_{42}	B'_{34}	B_{68}	B_{69}	B_{39}	B_{99}	B_{97}	B_{37}	B_{67}	B_{42}	B_{42}	C_{63}	C_{75}	B_{41}	B_{41}	B_{72}	C_{63}
B_{43}	B'_{45}	B_{76}	B_{77}	B_{47}	B'_{08}	B'_{09}	B_{48}	B_{78}	B_{43}	B_{43}	C_{05}	C_{12}	B_{45}	B_{45}	B_{73}	C_{05}
B_{44}	B'_{44}	B_{75}	B_{78}	B_{48}	B'_{09}	B'_{08}	B_{47}	B_{77}	B_{44}	B_{44}	C_{06}	C_{13}	B_{46}	B_{46}	B_{74}	C_{06}
B_{45}	B'_{43}	B_{78}	B_{74}	B_{44}	B'_{05}	B'_{07}	B_{46}	B_{76}	B_{45}	B_{45}	C_{05}	C_{12}	B_{43}	B_{43}	B_{75}	C_{05}
B_{46}	B'_{42}	B_{77}	B_{73}	B_{43}	B'_{04}	B'_{06}	B_{45}	B_{75}	B_{46}	B_{46}	C_{06}	C_{13}	B_{44}	B_{44}	B_{76}	C_{06}
B_{47}	B'_{41}	B_{73}	B_{76}	B_{46}	B'_{07}	B'_{05}	B_{44}	B_{74}	B_{47}	B_{47}	C_{61}	C_{73}	B_{48}	B_{48}	B_{77}	C_{61}
B_{48}	B'_{40}	B_{74}	B_{75}	B_{45}	B'_{06}	B'_{04}	B_{43}	B_{73}	B_{48}	B_{48}	C_{61}	C_{73}	B_{47}	B_{47}	B_{78}	C_{61}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B_{25}	B_{51}	B_{52}	B_{52}	C_{82}	B_{86}	C_{76}	B_{86}	B_{85}	B_{85}	C_{82}	C_{52}	C_{51}	C_{75}	C_{63}	B_{06}	B_{02}
B_{26}	B_{52}	B_{51}	B_{51}	C_{82}	B_{85}	C_{76}	B_{85}	B_{86}	B_{86}	C_{82}	C_{52}	C_{51}	C_{75}	C_{63}	B_{24}	B_{23}
B_{27}	B_{57}	B_{59}	B_{59}	C_{18}	B_{89}	C_{11}	B_{89}	B_{87}	B_{87}	C_{18}	C_{26}	C_{30}	C_{15}	C_{08}	B_{28}	B_{30}
B_{28}	B_{58}	B_{60}	B_{60}	C_{19}	B_{90}	C_{12}	B_{90}	B_{88}	B_{88}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{27}	B_{29}
B_{29}	B_{59}	B_{57}	B_{57}	C_{18}	B_{87}	C_{11}	B_{87}	B_{89}	B_{89}	C_{18}	C_{26}	C_{30}	C_{15}	C_{08}	B_{31}	B_{22}
B_{30}	B_{60}	B_{58}	B_{58}	C_{19}	B_{88}	C_{12}	B_{88}	B_{90}	B_{90}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{32}	B_{31}
B_{31}	B_{61}	B_{62}	B_{62}	C_{84}	B_{92}	C_{78}	B_{92}	B_{91}	B_{91}	C_{84}	C_{54}	C_{53}	C_{77}	C_{65}	B_{29}	B_{27}
B_{32}	B_{62}	B_{61}	B_{61}	C_{84}	B_{91}	C_{78}	B_{91}	B_{92}	B_{92}	C_{84}	C_{54}	C_{53}	C_{77}	C_{65}	B_{30}	B_{38}
B_{33}	B_{63}	B_{64}	B_{64}	C_{20}	B_{94}	C_{13}	B_{94}	B_{93}	B_{93}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{05}	B_{01}
B_{34}	B_{64}	B_{63}	B_{63}	C_{20}	B_{93}	C_{13}	B_{93}	B_{94}	B_{94}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{36}	B_{35}
B_{35}	B_{65}	B_{66}	B_{66}	C_{83}	B_{96}	C_{77}	B_{96}	B_{95}	B_{95}	C_{83}	C_{53}	C_{54}	C_{78}	C_{66}	B_{01}	B_{05}
B_{36}	B_{66}	B_{65}	B_{65}	C_{83}	B_{95}	C_{77}	B_{95}	B_{96}	B_{96}	C_{83}	C_{53}	C_{54}	C_{78}	C_{66}	B_{34}	B_{33}
B_{37}	B_{67}	B_{69}	B_{69}	C_{18}	B_{99}	C_{11}	B_{99}	B_{97}	B_{97}	C_{18}	C_{26}	C_{30}	C_{15}	C_{08}	B_{38}	B_{40}
B_{38}	B_{68}	B_{70}	B_{70}	C_{20}	B'_{01}	C_{13}	B'_{01}	B_{98}	B_{98}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{37}	B_{39}
B_{39}	B_{69}	B_{67}	B_{67}	C_{18}	B_{97}	C_{11}	B_{97}	B_{99}	B_{99}	C_{18}	C_{26}	C_{30}	C_{15}	C_{08}	B_{41}	B_{42}
B_{40}	B_{70}	B_{68}	B_{68}	C_{20}	B_{98}	C_{13}	B_{98}	B'_{01}	B'_{01}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{42}	B_{41}
B_{41}	B_{71}	B_{72}	B_{72}	C_{81}	B'_{03}	C_{75}	B'_{03}	B'_{02}	B'_{02}	C_{81}	C_{51}	C_{52}	C_{76}	C_{64}	B_{39}	B_{37}
B_{42}	B_{72}	B_{71}	B_{71}	C_{81}	B'_{02}	C_{75}	B'_{02}	B'_{03}	B'_{03}	C_{81}	C_{51}	C_{52}	C_{76}	C_{64}	B_{40}	B_{38}
B_{43}	B_{73}	B_{75}	B_{75}	C_{19}	B'_{06}	C_{12}	B'_{06}	B'_{04}	B'_{04}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{44}	B_{46}
B_{44}	B_{74}	B_{76}	B_{76}	C_{20}	B'_{07}	C_{13}	B'_{07}	B'_{05}	B'_{05}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{43}	B_{45}
B_{45}	B_{75}	B_{73}	B_{73}	C_{19}	B'_{04}	C_{12}	B'_{04}	B'_{06}	B'_{06}	C_{19}	C_{27}	C_{31}	C_{16}	C_{09}	B_{47}	B_{48}
B_{46}	B_{76}	B_{74}	B_{74}	C_{20}	B'_{05}	C_{13}	B'_{05}	B'_{07}	B'_{07}	C_{20}	C_{28}	C_{32}	C_{17}	C_{10}	B_{48}	B_{47}
B_{47}	B_{77}	B_{78}	B_{78}	C_{79}	B'_{09}	C_{73}	B'_{09}	B'_{08}	B'_{08}	C_{79}	C_{49}	C_{50}	C_{74}	C_{62}	B_{45}	B_{43}
B_{48}	B_{78}	B_{77}	B_{77}	C_{79}	B'_{08}	C_{73}	B'_{08}	B'_{09}	B'_{09}	C_{79}	C_{49}	C_{50}	C_{74}	C_{62}	B_{46}	B_{44}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{25}	B_{24}	B_{23}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{24}	B_{23}	B_{06}	B_{02}	C_{27}	C_{05}	C_{31}	C_{12}
B_{26}	B_{06}	B_{02}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{06}	B_{02}	B_{24}	B_{23}	C_{25}	C_{01}	C_{19}	C_{02}
B_{27}	B_{31}	B_{32}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{31}	B_{32}	B_{28}	B_{30}	C_{54}	C_{66}	C_{53}	C_{78}
B_{28}	B_{32}	B_{31}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{32}	B_{31}	B_{27}	B_{29}	C_{54}	C_{66}	C_{53}	C_{78}
B_{29}	B_{28}	B_{30}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	B_{28}	B_{30}	B_{31}	B_{32}	C_{27}	C_{05}	C_{31}	C_{12}
B_{30}	B_{27}	B_{29}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	B_{27}	B_{29}	B_{32}	B_{31}	C_{26}	C_{04}	C_{30}	C_{11}
B_{31}	B_{30}	B_{28}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{30}	B_{28}	B_{29}	B_{27}	C_{27}	C_{05}	C_{31}	C_{12}
B_{32}	B_{29}	B_{27}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{29}	B_{27}	B_{30}	B_{28}	C_{26}	C_{04}	C_{30}	C_{11}
B_{33}	B_{36}	B_{35}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{36}	B_{35}	B_{05}	B_{01}	C_{53}	C_{65}	C_{54}	C_{77}
B_{34}	B_{05}	B_{01}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	B_{05}	B_{01}	B_{36}	B_{35}	C_{25}	C_{01}	C_{29}	C_{02}
B_{35}	B_{34}	B_{33}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{34}	B_{33}	B_{01}	B_{05}	C_{28}	C_{06}	C_{32}	C_{13}
B_{36}	B_{01}	B_{05}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{01}	B_{05}	B_{34}	B_{33}	C_{25}	C_{01}	C_{29}	C_{02}
B_{37}	B_{41}	B_{42}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{41}	B_{42}	B_{38}	B_{40}	C_{51}	C_{63}	C_{52}	C_{75}
B_{38}	B_{42}	F_{41}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{42}	F_{41}	F_{37}	F_{39}	C_{51}	C_{63}	C_{52}	C_{75}
B_{39}	B_{38}	B_{40}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	B_{38}	B_{40}	B_{41}	B_{42}	C_{28}	C_{06}	C_{32}	C_{13}
B_{40}	B_{37}	B_{39}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	B_{37}	B_{39}	B_{42}	B_{41}	C_{26}	C_{04}	C_{30}	C_{11}
B_{41}	B_{40}	B_{38}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{40}	B_{38}	B_{39}	B_{37}	C_{28}	C_{06}	C_{32}	C_{13}
B_{42}	B_{39}	B_{37}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{39}	B_{37}	B_{40}	B_{38}	C_{26}	C_{04}	C_{30}	C_{11}
B_{43}	B_{47}	B_{48}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{47}	B_{48}	B_{44}	B_{46}	C_{49}	C_{61}	C_{50}	C_{73}
B_{44}	B_{48}	B_{47}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{48}	B_{47}	B_{43}	B_{45}	C_{49}	C_{61}	C_{50}	C_{73}
B_{45}	B_{44}	B_{46}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	B_{44}	B_{46}	B_{47}	B_{48}	C_{28}	C_{06}	C_{32}	C_{13}
B_{46}	B_{43}	B_{45}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	B_{43}	B_{45}	B_{48}	B_{47}	C_{27}	C_{05}	C_{31}	C_{12}
B_{47}	B_{46}	B_{44}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{46}	B_{44}	B_{45}	B_{43}	C_{28}	C_{06}	C_{32}	C_{13}
B_{48}	B_{45}	B_{43}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{45}	B_{43}	B_{46}	B_{44}	C_{27}	C_{05}	C_{31}	C_{12}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{25}	C_{09}	C_{16}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	C_{81}	C_{63}	B_{54}	B_{53}	B_{10}	B_{09}	C_{58}	C_{57}
B_{26}	C_{07}	C_{14}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	C_{81}	C_{63}	B_{10}	B_{09}	B_{54}	B_{53}	C_{58}	C_{57}
B_{27}	C_{65}	C_{77}	B_{30}	B_{22}	B_{28}	B_{31}	B_{27}	B_{29}	C_{22}	C_{08}	B_{61}	B_{62}	B_{58}	B_{60}	C_{34}	C_{38}
B_{28}	C_{65}	C_{77}	B_{29}	B_{31}	B_{27}	B_{32}	B_{28}	B_{30}	C_{23}	C_{09}	B_{62}	B_{61}	B_{57}	B_{59}	C_{35}	C_{39}
B_{29}	C_{09}	C_{16}	B_{32}	B_{30}	B_{31}	B_{28}	B_{29}	B_{27}	C_{22}	C_{08}	B_{58}	B_{60}	B_{61}	B_{62}	C_{34}	C_{38}
B_{30}	C_{08}	C_{15}	B_{31}	B_{29}	B_{32}	B_{27}	B_{30}	B_{28}	C_{23}	C_{09}	B_{57}	B_{59}	B_{62}	B_{61}	C_{35}	C_{39}
B_{31}	C_{09}	C_{16}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	C_{83}	C_{65}	B_{60}	B_{58}	B_{59}	B_{57}	C_{60}	C_{59}
B_{32}	C_{08}	C_{15}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	C_{83}	C_{65}	B_{59}	B_{57}	B_{60}	B_{58}	C_{60}	C_{59}
B_{33}	C_{66}	C_{78}	B_{01}	B_{35}	B_{05}	B_{36}	B_{33}	B_{34}	C_{24}	C_{10}	B_{66}	B_{65}	B_{11}	B_{07}	C_{36}	C_{40}
B_{34}	C_{07}	C_{14}	B_{35}	B_{01}	B_{36}	B_{05}	B_{34}	B_{33}	C_{24}	C_{10}	B_{11}	B_{07}	B_{66}	B_{65}	C_{36}	C_{40}
B_{35}	C_{10}	C_{17}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	C_{84}	C_{66}	B_{64}	B_{63}	B_{07}	B_{11}	C_{59}	C_{60}
B_{36}	C_{07}	C_{14}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	C_{84}	C_{66}	B_{07}	B_{11}	B_{64}	B_{63}	C_{59}	C_{60}
B_{37}	C_{64}	C_{76}	B_{40}	B_{42}	B_{38}	B_{41}	B_{37}	B_{39}	C_{22}	C_{08}	B_{71}	B_{72}	B_{68}	B_{70}	C_{34}	C_{38}
B_{38}	C_{64}	C_{76}	B_{39}	B_{41}	B_{37}	B_{42}	B_{38}	B_{40}	C_{24}	C_{10}	B_{72}	B_{71}	B_{67}	B_{69}	C_{36}	C_{40}
B_{39}	C_{10}	C_{17}	B_{42}	B_{40}	B_{41}	B_{38}	B_{39}	B_{37}	C_{22}	C_{08}	B_{68}	B_{70}	B_{71}	B_{72}	C_{34}	C_{38}
B_{40}	C_{08}	C_{15}	B_{41}	B_{39}	B_{42}	B_{37}	B_{40}	B_{38}	C_{24}	C_{10}	B_{67}	B_{69}	B_{72}	B_{71}	C_{36}	C_{40}
B_{41}	C_{10}	C_{17}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	C_{82}	C_{64}	B_{70}	B_{68}	B_{69}	B_{67}	C_{57}	C_{58}
B_{42}	C_{08}	C_{15}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	C_{82}	C_{64}	B_{69}	B_{67}	B_{70}	B_{68}	C_{57}	C_{58}
B_{43}	C_{62}	C_{74}	B_{46}	B_{48}	B_{44}	B_{47}	B_{43}	B_{45}	C_{23}	C_{09}	B_{77}	B_{78}	B_{74}	B_{76}	C_{35}	C_{39}
B_{44}	C_{62}	C_{74}	B_{45}	B_{47}	B_{43}	B_{48}	B_{44}	B_{46}	C_{24}	C_{10}	B_{78}	B_{77}	B_{73}	B_{75}	C_{36}	C_{40}
B_{45}	C_{10}	C_{17}	B_{48}	B_{46}	B_{47}	B_{44}	B_{45}	B_{43}	C_{23}	C_{09}	B_{74}	B_{76}	B_{77}	B_{78}	C_{35}	C_{39}
B_{46}	C_{09}	C_{16}	B_{47}	B_{45}	B_{48}	B_{43}	B_{46}	B_{44}	C_{24}	C_{10}	B_{73}	B_{75}	B_{78}	B_{77}	C_{36}	C_{40}
B_{47}	C_{10}	C_{17}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	C_{80}	C_{62}	B_{76}	B_{74}	B_{75}	B_{73}	C_{55}	C_{56}
B_{48}	C_{09}	C_{16}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	C_{80}	C_{62}	B_{75}	B_{73}	B_{76}	B_{74}	C_{55}	C_{56}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{25}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{54}	B_{53}	B_{10}	B_{09}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
B_{26}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{10}	B_{09}	B_{54}	B_{53}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
B_{27}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{61}	B_{62}	B_{58}	B_{60}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}
B_{28}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{62}	B_{61}	B_{57}	B_{59}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}
B_{29}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}	B_{58}	B_{60}	B_{61}	B_{62}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
B_{30}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}	B_{57}	B_{59}	B_{62}	B_{61}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{31}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{60}	B_{58}	B_{59}	B_{57}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
B_{32}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{59}	B_{57}	B_{60}	B_{58}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{33}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{66}	B_{65}	B_{11}	B_{07}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}
B_{34}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}	B_{11}	B_{07}	B_{66}	B_{65}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
B_{35}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{64}	B_{63}	B_{07}	B_{11}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{36}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{07}	B_{11}	B_{64}	B_{63}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
B_{37}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{71}	B_{72}	B_{68}	B_{70}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}
B_{38}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{72}	B_{71}	B_{67}	B_{69}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}
B_{39}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}	B_{68}	B_{70}	B_{71}	B_{72}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{40}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}	B_{67}	B_{69}	B_{72}	B_{71}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{41}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{70}	B_{68}	B_{69}	B_{67}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{42}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{69}	B_{67}	B_{70}	B_{68}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
B_{43}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{77}	B_{78}	B_{74}	B_{76}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}
B_{44}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{78}	B_{77}	B_{73}	B_{75}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}
B_{45}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}	B_{74}	B_{76}	B_{77}	B_{78}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{46}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}	B_{73}	B_{75}	B_{78}	B_{77}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
B_{47}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{76}	B_{74}	B_{75}	B_{73}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
B_{48}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{75}	B_{73}	B_{76}	B_{74}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B_{25}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	C_{70}	C_{69}	C_{81}	C_{75}	B_{13}	B_{16}	B_{84}	B_{83}	C_{41}	C_{02}
B_{26}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	C_{70}	C_{69}	C_{81}	C_{75}	B_{84}	B_{83}	B_{13}	B_{16}	C_{43}	C_{12}
B_{27}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}	C_{42}	C_{46}	C_{22}	C_{15}	B_{88}	B_{90}	B_{91}	B_{92}	C_{43}	C_{12}
B_{28}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}	C_{43}	C_{47}	C_{23}	C_{16}	B_{87}	B_{89}	B_{92}	B_{91}	C_{42}	C_{11}
B_{29}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}	C_{42}	C_{46}	C_{22}	C_{15}	B_{91}	B_{92}	B_{88}	B_{90}	C_{72}	C_{78}
B_{30}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}	C_{43}	C_{47}	C_{23}	C_{16}	B_{92}	B_{91}	B_{87}	B_{89}	C_{72}	C_{78}
B_{31}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	C_{72}	C_{71}	C_{83}	C_{77}	B_{89}	B_{87}	B_{90}	P_{88}	C_{42}	C_{11}
B_{32}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	C_{72}	C_{71}	C_{83}	C_{77}	B_{90}	B_{88}	B_{89}	B_{87}	C_{43}	C_{12}
B_{33}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}	C_{44}	C_{48}	C_{24}	C_{17}	B_{15}	B_{17}	B_{96}	B_{95}	C_{41}	C_{02}
B_{34}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}	C_{44}	C_{48}	C_{24}	C_{17}	B_{96}	B_{95}	B_{15}	B_{17}	C_{71}	C_{77}
B_{35}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	C_{71}	C_{72}	C_{84}	C_{78}	B_{17}	B_{15}	B_{94}	B_{93}	C_{41}	C_{02}
B_{36}	F_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	C_{71}	C_{72}	C_{84}	C_{78}	B_{94}	B_{93}	B_{17}	B_{15}	C_{44}	C_{13}
B_{37}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}	C_{42}	C_{46}	C_{22}	C_{15}	B_{98}	B'_{01}	B'_{02}	B'_{03}	C_{44}	C_{13}
B_{38}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}	C_{44}	C_{48}	C_{24}	C_{17}	B_{97}	B_{99}	B'_{03}	B'_{02}	C_{42}	C_{11}
B_{39}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}	C_{42}	C_{46}	C_{22}	C_{15}	B'_{02}	B'_{03}	B_{98}	B'_{01}	C_{69}	C_{75}
B_{40}	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}	C_{44}	C_{48}	C_{24}	C_{17}	B'_{03}	B'_{02}	B_{97}	B_{99}	C_{69}	C_{75}
B_{41}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	C_{69}	C_{70}	C_{82}	C_{76}	B_{99}	B_{97}	B'_{01}	B_{98}	C_{42}	C_{11}
B_{42}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	C_{69}	C_{70}	C_{82}	C_{76}	B'_{01}	B_{98}	B_{99}	B_{97}	C_{44}	C_{13}
B_{43}	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}	C_{43}	C_{47}	C_{23}	C_{16}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	C_{44}	C_{13}
B_{44}	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}	C_{44}	C_{48}	C_{24}	C_{17}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	C_{43}	C_{12}
B_{45}	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}	C_{43}	C_{47}	C_{23}	C_{16}	B'_{08}	B'_{09}	B'_{05}	B'_{07}	C_{67}	C_{73}
B_{46}	B_{77}	B_{75}	B_{78}	B_{73}	B_{76}	B_{74}	C_{44}	C_{48}	C_{24}	C_{17}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	C_{67}	C_{73}
B_{47}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	C_{67}	C_{68}	C_{80}	C_{74}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	C_{43}	C_{12}
B_{48}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	C_{67}	C_{68}	C_{80}	C_{74}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	C_{44}	C_{13}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B_{25}	C_{45}	C_{03}	C_{14}	C_{21}	B_{84}	B_{83}	B_{13}	B_{16}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B_{16}	B_{83}
B_{26}	C_{47}	C_{19}	C_{16}	C_{23}	B_{13}	B_{16}	B_{84}	B_{83}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{83}	B_{16}
B_{27}	C_{47}	C_{19}	C_{16}	C_{23}	B_{91}	B_{92}	B_{88}	B_{90}	C_{72}	C_{78}	C_{71}	C_{84}	C_{77}	C_{83}	B_{90}	B_{92}
B_{28}	C_{46}	C_{18}	C_{15}	C_{22}	B_{92}	B_{91}	B_{87}	B_{89}	C_{72}	C_{78}	C_{71}	C_{84}	C_{77}	C_{83}	B_{89}	B_{91}
B_{29}	C_{71}	C_{84}	C_{77}	C_{83}	B_{88}	B_{90}	B_{91}	B_{92}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B_{92}	B_{90}
B_{30}	C_{71}	C_{84}	C_{77}	C_{83}	B_{87}	B_{89}	B_{92}	B_{91}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B_{91}	B_{89}
B_{31}	C_{46}	C_{18}	C_{15}	C_{22}	B_{90}	B_{88}	B_{89}	B_{87}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B_{87}	B_{88}
B_{32}	C_{47}	C_{19}	C_{16}	C_{23}	B_{89}	B_{87}	B_{90}	B_{88}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B_{88}	B_{87}
B_{33}	C_{45}	C_{03}	C_{14}	C_{21}	B_{96}	B_{95}	B_{15}	B_{17}	C_{71}	C_{77}	C_{72}	C_{83}	C_{78}	C_{84}	B_{17}	B_{95}
B_{34}	C_{72}	C_{83}	C_{78}	C_{84}	B_{15}	B_{17}	B_{96}	B_{95}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{95}	B_{17}
B_{35}	C_{45}	C_{03}	C_{14}	C_{21}	B_{94}	B_{93}	B_{17}	B_{15}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	B_{15}	B_{93}
B_{36}	C_{48}	C_{20}	C_{17}	C_{24}	B_{17}	B_{15}	B_{94}	B_{93}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	B_{93}	B_{15}
B_{37}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{02}	B'_{03}	B_{98}	B'_{01}	C_{69}	C_{75}	C_{70}	C_{81}	C_{76}	C_{82}	B'_{01}	B'_{03}
B_{38}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{03}	B'_{02}	B_{97}	B_{99}	C_{69}	C_{75}	C_{70}	C_{81}	C_{76}	C_{82}	B_{99}	B'_{02}
B_{39}	C_{70}	C_{81}	C_{76}	C_{82}	B_{98}	B'_{01}	B'_{02}	B'_{03}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{03}	B'_{01}
B_{40}	C_{70}	C_{81}	C_{76}	C_{82}	B_{97}	B_{99}	B'_{03}	B'_{02}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{02}	B_{99}
B_{41}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{01}	B_{98}	B_{99}	B_{97}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	B_{97}	B_{98}
B_{42}	C_{48}	C_{20}	C_{17}	C_{24}	B_{99}	B_{97}	B'_{01}	B_{98}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	B_{98}	B_{97}
B_{43}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{08}	B'_{09}	B'_{05}	B'_{07}	C_{67}	C_{73}	C_{68}	C_{79}	C_{74}	C_{80}	B'_{07}	B'_{09}
B_{44}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	C_{67}	C_{73}	C_{68}	C_{79}	C_{74}	C_{80}	B'_{06}	B'_{08}
B_{45}	C_{68}	C_{79}	C_{74}	C_{80}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{09}	B'_{07}
B_{46}	C_{68}	C_{79}	C_{74}	C_{80}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{08}	B'_{06}
B_{47}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{04}	B'_{05}
B_{48}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{05}	B'_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B_{25}	B_{13}	B_{84}	B_{85}	B_{86}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}
B_{26}	B_{84}	B_{13}	B_{86}	B_{84}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}
B_{27}	B_{88}	B_{91}	B_{87}	B_{89}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}
B_{28}	B_{87}	B_{92}	B_{88}	B_{90}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{23}	B'_{22}	B'_{25}	B'_{24}	B'_{27}	B'_{26}
B_{29}	B_{91}	B_{88}	B_{89}	B_{87}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{24}	B'_{26}	B'_{22}	B'_{27}	B'_{23}	B'_{25}
B_{30}	B_{92}	B_{87}	B_{90}	B_{88}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{25}	B'_{27}	B'_{23}	B'_{26}	B'_{22}	B'_{24}
B_{31}	B_{89}	B_{90}	B_{91}	B_{92}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	B'_{26}	B'_{24}	B'_{27}	B'_{22}	B'_{25}	B'_{23}
B_{32}	B_{90}	B_{89}	B_{92}	B_{91}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	B'_{27}	B'_{25}	B'_{26}	B'_{23}	B'_{24}	B'_{22}
B_{33}	B_{15}	B_{96}	B_{93}	B_{94}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{29}	B'_{28}	B'_{31}	B'_{30}	B'_{33}	B'_{32}
B_{34}	B_{96}	B_{15}	B_{94}	B_{93}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}
B_{35}	B_{17}	B_{94}	B_{95}	B_{96}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	B'_{32}	B'_{30}	B'_{33}	B'_{28}	B'_{31}	B'_{29}
B_{36}	B_{94}	B_{17}	B_{96}	B_{95}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}
B_{37}	B_{98}	B'_{02}	B_{97}	B_{99}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{34}	B'_{35}	B'_{36}	B'_{37}	B'_{38}	B'_{39}
B_{38}	B_{97}	B'_{03}	B_{98}	B'_{01}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{35}	B'_{34}	B'_{37}	B'_{36}	B'_{39}	B'_{38}
B_{39}	B'_{02}	B_{98}	B_{99}	B_{97}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{36}	B'_{38}	B'_{34}	B'_{39}	B'_{35}	B'_{37}
B_{40}	B'_{03}	B_{97}	B'_{01}	B_{98}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{37}	B'_{39}	B'_{35}	B'_{38}	B'_{34}	B'_{36}
B_{41}	B_{99}	B'_{01}	B'_{02}	B'_{03}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	B'_{38}	B'_{36}	B'_{39}	B'_{34}	B'_{37}	B'_{35}
B_{42}	B'_{01}	B_{99}	B'_{03}	B'_{02}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	B'_{39}	B'_{37}	B'_{38}	B'_{35}	B'_{36}	B'_{34}
B_{43}	B'_{05}	B'_{08}	B'_{04}	B'_{06}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}
B_{44}	B'_{04}	B'_{09}	B'_{05}	B'_{07}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{41}	B'_{40}	B'_{43}	B'_{42}	B'_{45}	B'_{44}
B_{45}	B'_{08}	B'_{05}	B'_{06}	B'_{04}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{42}	B'_{44}	B'_{40}	B'_{45}	B'_{41}	B'_{43}
B_{46}	B'_{09}	B'_{04}	B'_{07}	B'_{05}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{43}	B'_{45}	B'_{41}	B'_{44}	B'_{40}	B'_{42}
B_{47}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	B'_{44}	B'_{42}	B'_{45}	B'_{40}	B'_{43}	B'_{41}
B_{48}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	B'_{45}	B'_{43}	B'_{44}	B'_{41}	B'_{42}	B'_{40}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B_{25}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	C_{27}	C_{35}	C_{31}	C_{43}
B_{26}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	C_{25}	C_{33}	C_{29}	C_{41}
B_{27}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{24}	B'_{26}	B'_{22}	B'_{27}	B'_{23}	B'_{25}	C_{54}	C_{60}	C_{53}	C_{72}
B_{28}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{25}	B'_{27}	B'_{23}	B'_{26}	B'_{22}	B'_{24}	C_{54}	C_{60}	C_{53}	C_{72}
B_{29}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	C_{27}	C_{35}	C_{31}	C_{43}
B_{30}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	B'_{23}	B'_{22}	B'_{25}	B'_{24}	B'_{27}	B'_{26}	C_{26}	C_{34}	C_{30}	C_{42}
B_{31}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{27}	B'_{25}	B'_{26}	B'_{23}	B'_{24}	B'_{22}	C_{27}	C_{35}	C_{31}	C_{43}
B_{32}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{26}	B'_{24}	B'_{27}	B'_{22}	B'_{25}	B'_{23}	C_{26}	C_{34}	C_{30}	C_{42}
B_{33}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}	C_{53}	C_{59}	C_{54}	C_{71}
B_{34}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	B'_{29}	B'_{28}	B'_{31}	B'_{30}	B'_{33}	B'_{32}	C_{25}	C_{33}	C_{29}	C_{41}
B_{35}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}	C_{28}	C_{36}	C_{32}	C_{44}
B_{36}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{32}	B'_{30}	B'_{33}	B'_{28}	B'_{31}	B'_{29}	C_{25}	C_{33}	C_{29}	C_{41}
B_{37}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{36}	B'_{38}	B'_{34}	B'_{39}	B'_{35}	B'_{37}	C_{51}	C_{57}	C_{52}	C_{69}
B_{38}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{37}	B'_{39}	B'_{35}	B'_{38}	B'_{34}	B'_{36}	C_{51}	C_{57}	C_{52}	C_{69}
B_{39}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	B'_{34}	B'_{35}	B'_{36}	B'_{37}	B'_{38}	B'_{39}	C_{28}	C_{36}	C_{32}	C_{44}
B_{40}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	B'_{35}	B'_{34}	B'_{37}	B'_{36}	B'_{39}	B'_{38}	C_{26}	C_{34}	C_{30}	C_{42}
B_{41}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B'_{39}	B'_{37}	B'_{38}	B'_{35}	B'_{36}	B'_{34}	C_{28}	C_{36}	C_{32}	C_{44}
B_{42}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{38}	B'_{36}	B'_{39}	B'_{34}	B'_{37}	B'_{35}	C_{26}	C_{34}	C_{30}	C_{42}
B_{43}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{42}	B'_{44}	B'_{40}	B'_{45}	B'_{41}	B'_{43}	C_{49}	C_{55}	C_{50}	C_{67}
B_{44}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{43}	B'_{45}	B'_{41}	B'_{44}	B'_{40}	B'_{42}	C_{49}	C_{55}	C_{50}	C_{67}
B_{45}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{28}	C_{36}	C_{32}	C_{44}
B_{46}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	B'_{41}	B'_{40}	B'_{43}	B'_{42}	B'_{45}	B'_{44}	C_{27}	C_{35}	C_{31}	C_{43}
B_{47}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B'_{45}	B'_{43}	B'_{44}	B'_{41}	B'_{42}	B'_{40}	C_{28}	C_{36}	C_{32}	C_{44}
B_{48}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B'_{44}	B'_{42}	B'_{45}	B'_{40}	B'_{43}	B'_{41}	C_{27}	C_{35}	C_{31}	C_{43}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{25}	C_{39}	C_{47}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	C_{64}	C_{76}	C_{82}	D_{01}	C_{01}	C_{05}	C_{63}	D_{04}
B_{26}	C_{37}	C_{45}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	C_{64}	C_{76}	C_{82}	D_{01}	C_{05}	C_{01}	C_{63}	D_{04}
B_{27}	C_{59}	C_{71}	B'_{25}	B'_{27}	B'_{23}	B'_{26}	B'_{22}	B'_{24}	C_{04}	C_{11}	C_{18}	D_{01}	C_{05}	C_{66}	C_{08}	D_{04}
B_{28}	C_{59}	C_{71}	B'_{24}	B'_{26}	B'_{22}	B'_{27}	B'_{23}	B'_{25}	C_{05}	C_{12}	C_{19}	D_{01}	C_{04}	C_{66}	C_{09}	D_{04}
B_{29}	C_{39}	C_{47}	B'_{27}	B'_{25}	B'_{26}	B'_{23}	B'_{24}	B'_{22}	C_{04}	C_{11}	C_{18}	D_{01}	C_{66}	C_{05}	C_{08}	D_{04}
B_{30}	C_{38}	C_{46}	B'_{26}	B'_{24}	B'_{27}	B'_{22}	B'_{25}	B'_{23}	C_{05}	C_{12}	C_{19}	D_{01}	C_{66}	C_{04}	C_{09}	D_{04}
B_{31}	C_{39}	C_{47}	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	C_{66}	C_{78}	C_{84}	D_{01}	C_{05}	C_{05}	C_{65}	D_{04}
B_{32}	C_{38}	C_{46}	B'_{23}	B'_{22}	B'_{25}	B'_{24}	B'_{27}	B'_{26}	C_{66}	C_{78}	C_{84}	D_{01}	C_{04}	C_{04}	C_{65}	D_{04}
B_{33}	C_{60}	C_{72}	B'_{30}	B'_{32}	B'_{28}	B'_{33}	B'_{29}	B'_{31}	C_{06}	C_{13}	C_{20}	D_{01}	C_{01}	C_{65}	C_{10}	D_{04}
B_{34}	C_{37}	C_{45}	B'_{32}	B'_{30}	B'_{33}	B'_{28}	B'_{31}	B'_{29}	C_{06}	C_{13}	C_{20}	D_{01}	C_{65}	C_{01}	C_{10}	D_{04}
B_{35}	C_{40}	C_{48}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	C_{65}	C_{77}	C_{83}	D_{01}	C_{01}	C_{06}	C_{66}	D_{04}
B_{36}	C_{37}	C_{45}	B'_{29}	B'_{28}	B'_{31}	B'_{30}	B'_{33}	B'_{32}	C_{65}	C_{77}	C_{83}	D_{01}	C_{06}	C_{01}	C_{66}	D_{04}
B_{37}	C_{58}	C_{70}	B'_{37}	B'_{39}	B'_{35}	B'_{38}	B'_{34}	B'_{36}	C_{04}	C_{11}	C_{18}	D_{01}	C_{06}	C_{63}	C_{08}	D_{04}
B_{38}	C_{58}	C_{70}	B'_{36}	B'_{38}	B'_{34}	B'_{39}	B'_{35}	B'_{37}	C_{06}	C_{13}	C_{20}	D_{01}	C_{04}	C_{63}	C_{10}	D_{04}
B_{39}	C_{40}	C_{48}	B'_{39}	B'_{37}	B'_{38}	B'_{35}	B'_{36}	B'_{34}	C_{04}	C_{11}	C_{18}	D_{01}	C_{63}	C_{06}	C_{08}	D_{04}
B_{40}	C_{38}	C_{46}	B'_{38}	B'_{36}	B'_{39}	B'_{34}	B'_{37}	B'_{35}	C_{06}	C_{13}	C_{20}	D_{01}	C_{63}	C_{04}	C_{10}	D_{04}
B_{41}	C_{40}	C_{48}	B'_{34}	B'_{35}	B'_{36}	B'_{37}	B'_{38}	B'_{39}	C_{63}	C_{75}	C_{81}	D_{01}	C_{04}	C_{06}	C_{64}	D_{04}
B_{42}	C_{38}	C_{46}	B'_{35}	B'_{39}	B'_{37}	B'_{36}	B'_{39}	B'_{38}	C_{63}	C_{75}	C_{81}	D_{01}	C_{06}	C_{04}	C_{64}	D_{04}
B_{43}	C_{56}	C_{68}	B'_{43}	B'_{45}	B'_{41}	B'_{44}	B'_{40}	B'_{42}	C_{05}	C_{12}	C_{19}	D_{01}	C_{06}	C_{61}	C_{09}	D_{04}
B_{44}	C_{56}	C_{68}	B'_{42}	B'_{44}	B'_{40}	B'_{45}	B'_{41}	B'_{43}	C_{06}	C_{13}	C_{20}	D_{01}	C_{05}	C_{61}	C_{10}	D_{04}
B_{45}	C_{40}	C_{48}	B'_{45}	B'_{43}	B'_{44}	B'_{41}	B'_{42}	B'_{40}	C_{05}	C_{12}	C_{19}	D_{01}	C_{61}	C_{06}	C_{09}	D_{04}
B_{46}	C_{39}	C_{47}	B'_{44}	B'_{42}	B'_{45}	B'_{40}	B'_{43}	B'_{41}	C_{06}	C_{13}	C_{20}	D_{01}	C_{61}	C_{05}	C_{10}	D_{04}
B_{47}	C_{40}	C_{48}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{61}	C_{73}	C_{79}	D_{01}	C_{05}	C_{06}	C_{62}	D_{04}
B_{48}	C_{39}	C_{47}	B'_{41}	B'_{40}	B'_{43}	B'_{42}	B'_{45}	B'_{44}	C_{61}	C_{73}	C_{79}	D_{01}	C_{06}	C_{05}	C_{62}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
B_{25}	C_{07}	C_{09}	D_{02}	C_{02}	C_{12}	C_{75}	D_{04}	C_{14}	C_{16}	D_{03}	C_{03}	C_{19}	C_{81}	D_{04}	C_{21}	C_{23}
B_{26}	C_{09}	C_{07}	D_{02}	C_{12}	C_{02}	C_{75}	D_{04}	C_{16}	C_{14}	D_{03}	C_{19}	C_{03}	C_{81}	D_{04}	C_{23}	C_{21}
B_{27}	C_{09}	C_{65}	D_{02}	C_{12}	C_{78}	C_{15}	D_{04}	C_{16}	C_{77}	D_{03}	C_{19}	C_{84}	C_{22}	D_{04}	C_{23}	C_{83}
B_{28}	C_{08}	C_{65}	D_{02}	C_{11}	C_{78}	C_{16}	D_{04}	C_{15}	C_{77}	D_{03}	C_{18}	C_{84}	C_{23}	D_{04}	C_{22}	C_{83}
B_{29}	C_{65}	C_{09}	D_{02}	C_{78}	C_{12}	C_{15}	D_{04}	C_{77}	C_{16}	D_{03}	C_{84}	C_{19}	C_{22}	D_{04}	C_{83}	C_{23}
B_{30}	C_{65}	C_{08}	D_{02}	C_{78}	C_{11}	C_{16}	D_{04}	C_{77}	C_{15}	D_{03}	C_{84}	C_{18}	C_{23}	D_{04}	C_{83}	C_{22}
B_{31}	C_{08}	C_{09}	D_{02}	C_{11}	C_{12}	C_{77}	D_{04}	C_{15}	C_{16}	D_{03}	C_{18}	C_{19}	C_{83}	D_{04}	C_{22}	C_{23}
B_{32}	C_{09}	C_{08}	D_{02}	C_{12}	C_{11}	C_{77}	D_{04}	C_{16}	C_{15}	D_{03}	C_{19}	C_{18}	C_{83}	D_{04}	C_{23}	C_{22}
B_{33}	C_{07}	C_{66}	D_{02}	C_{02}	C_{77}	C_{17}	D_{04}	C_{14}	C_{78}	D_{03}	C_{03}	C_{83}	C_{24}	D_{04}	C_{21}	C_{84}
B_{34}	C_{66}	C_{07}	D_{02}	C_{77}	C_{02}	C_{17}	D_{04}	C_{78}	C_{14}	D_{03}	C_{83}	C_{03}	C_{24}	D_{04}	C_{84}	C_{21}
B_{35}	C_{07}	C_{10}	D_{02}	C_{02}	C_{13}	C_{78}	D_{04}	C_{14}	C_{17}	D_{03}	C_{03}	C_{20}	C_{84}	D_{04}	C_{21}	C_{24}
B_{36}	C_{10}	C_{07}	D_{02}	C_{13}	C_{02}	C_{78}	D_{04}	C_{17}	C_{14}	D_{03}	C_{20}	C_{03}	C_{84}	D_{04}	C_{24}	C_{21}
B_{37}	C_{10}	C_{64}	D_{02}	C_{13}	C_{75}	C_{15}	D_{04}	C_{17}	C_{76}	D_{03}	C_{20}	C_{81}	C_{22}	D_{04}	C_{24}	C_{82}
B_{38}	C_{08}	C_{64}	D_{02}	C_{11}	C_{75}	C_{17}	D_{04}	C_{15}	C_{76}	D_{03}	C_{18}	C_{81}	C_{24}	D_{04}	C_{22}	C_{82}
B_{39}	C_{64}	C_{10}	D_{02}	C_{75}	C_{13}	C_{15}	D_{04}	C_{76}	C_{17}	D_{03}	C_{81}	C_{20}	C_{22}	D_{04}	C_{82}	C_{24}
B_{40}	C_{64}	C_{08}	D_{02}	C_{75}	C_{11}	C_{17}	D_{04}	C_{76}	C_{15}	D_{03}	C_{81}	C_{18}	C_{24}	D_{04}	C_{82}	C_{22}
B_{41}	C_{08}	C_{10}	D_{02}	C_{11}	C_{13}	C_{76}	D_{04}	C_{15}	C_{17}	D_{03}	C_{18}	C_{20}	C_{82}	D_{04}	C_{22}	C_{24}
B_{42}	C_{10}	C_{08}	D_{02}	C_{13}	C_{11}	C_{76}	D_{04}	C_{17}	C_{15}	D_{03}	C_{20}	C_{18}	C_{82}	D_{04}	C_{24}	C_{22}
B_{43}	C_{10}	C_{62}	D_{02}	C_{13}	C_{73}	C_{16}	D_{04}	C_{17}	C_{74}	D_{03}	C_{20}	C_{79}	C_{23}	D_{04}	C_{24}	C_{80}
B_{44}	C_{09}	C_{62}	D_{02}	C_{12}	C_{73}	C_{17}	D_{04}	C_{16}	C_{74}	D_{03}	C_{19}	C_{79}	C_{24}	D_{09}	C_{23}	C_{80}
B_{45}	C_{62}	C_{10}	D_{02}	C_{73}	C_{13}	C_{16}	D_{04}	C_{74}	C_{17}	D_{03}	C_{79}	C_{20}	C_{23}	D_{04}	C_{80}	C_{24}
B_{46}	C_{62}	C_{09}	D_{02}	C_{73}	C_{12}	C_{17}	D_{04}	C_{74}	C_{16}	D_{03}	C_{79}	C_{19}	C_{24}	D_{04}	C_{80}	C_{23}
B_{47}	C_{09}	C_{10}	D_{02}	C_{12}	C_{13}	C_{74}	D_{04}	C_{16}	C_{17}	D_{03}	C_{19}	C_{20}	C_{80}	D_{04}	C_{23}	C_{24}
B_{48}	C_{10}	C_{09}	D_{02}	C_{13}	C_{12}	C_{74}	D_{04}	C_{17}	C_{16}	D_{03}	C_{20}	C_{19}	C_{80}	D_{04}	C_{24}	C_{23}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B_{25}	C_{52}	D_{01}	C_{25}	C_{27}	C_{51}	D_{02}	C_{29}	C_{31}	C_{58}	D_{01}	C_{33}	C_{35}	C_{57}	D_{03}	C_{37}	C_{39}
B_{26}	C_{52}	D_{01}	C_{27}	C_{25}	C_{51}	D_{02}	C_{31}	C_{29}	C_{58}	D_{01}	C_{35}	C_{33}	C_{57}	D_{03}	C_{39}	C_{37}
B_{27}	C_{26}	D_{01}	C_{27}	C_{54}	C_{30}	D_{02}	C_{31}	C_{53}	C_{34}	D_{01}	C_{35}	C_{60}	C_{38}	D_{03}	C_{39}	C_{59}
B_{28}	C_{27}	D_{01}	C_{26}	C_{54}	C_{31}	D_{02}	C_{30}	C_{53}	C_{35}	D_{01}	C_{34}	C_{60}	C_{39}	D_{03}	C_{38}	C_{59}
B_{29}	C_{26}	D_{01}	C_{54}	C_{27}	C_{30}	D_{02}	C_{53}	C_{31}	C_{34}	D_{01}	C_{60}	C_{35}	C_{38}	D_{03}	C_{59}	C_{39}
B_{30}	C_{27}	D_{01}	C_{54}	C_{26}	C_{31}	D_{02}	C_{53}	C_{30}	C_{35}	D_{01}	C_{60}	C_{34}	C_{39}	D_{03}	C_{59}	C_{38}
B_{31}	C_{54}	D_{01}	C_{26}	C_{27}	C_{53}	D_{02}	C_{30}	C_{31}	C_{60}	D_{01}	C_{34}	C_{35}	C_{59}	D_{03}	C_{38}	C_{39}
B_{32}	C_{54}	D_{01}	C_{27}	C_{26}	C_{53}	D_{02}	C_{31}	C_{30}	C_{60}	D_{01}	C_{35}	C_{34}	C_{59}	D_{03}	C_{39}	C_{38}
B_{33}	C_{28}	D_{01}	C_{25}	C_{53}	C_{32}	D_{02}	C_{29}	C_{54}	C_{36}	D_{01}	C_{33}	C_{59}	C_{40}	D_{03}	C_{37}	C_{60}
B_{34}	C_{28}	D_{01}	C_{53}	C_{25}	C_{32}	D_{02}	C_{54}	C_{29}	C_{36}	D_{01}	C_{59}	C_{33}	C_{40}	D_{03}	C_{60}	C_{37}
B_{35}	C_{53}	D_{01}	C_{25}	C_{28}	C_{54}	D_{02}	C_{29}	C_{32}	C_{59}	D_{01}	C_{33}	C_{36}	C_{60}	D_{03}	C_{37}	C_{40}
B_{36}	C_{53}	D_{01}	C_{28}	C_{25}	C_{54}	D_{02}	C_{32}	C_{29}	C_{59}	D_{01}	C_{36}	C_{33}	C_{60}	D_{03}	C_{40}	C_{37}
B_{37}	C_{26}	D_{01}	C_{28}	C_{51}	C_{30}	D_{02}	C_{32}	C_{52}	C_{34}	D_{01}	C_{36}	C_{57}	C_{38}	D_{03}	C_{40}	C_{58}
B_{38}	C_{28}	D_{01}	C_{26}	C_{51}	C_{32}	D_{02}	C_{30}	C_{52}	C_{36}	D_{01}	C_{34}	C_{57}	C_{40}	D_{03}	C_{38}	C_{58}
B_{39}	C_{26}	D_{01}	C_{51}	C_{28}	C_{30}	D_{02}	C_{52}	C_{32}	C_{34}	D_{01}	C_{57}	C_{36}	C_{38}	D_{03}	C_{58}	C_{40}
B_{40}	C_{28}	D_{01}	C_{51}	C_{26}	C_{32}	D_{02}	C_{52}	C_{30}	C_{36}	D_{01}	C_{57}	C_{34}	C_{40}	D_{03}	C_{58}	C_{38}
B_{41}	C_{51}	D_{01}	C_{26}	C_{28}	C_{52}	D_{02}	C_{30}	C_{32}	C_{57}	D_{01}	C_{34}	C_{36}	C_{58}	D_{03}	C_{38}	C_{40}
B_{42}	C_{51}	D_{01}	C_{28}	C_{26}	C_{52}	D_{02}	C_{32}	C_{30}	C_{57}	D_{01}	C_{36}	C_{34}	C_{58}	D_{03}	C_{40}	C_{38}
B_{43}	C_{27}	D_{01}	C_{28}	C_{49}	C_{31}	D_{02}	C_{32}	C_{50}	C_{35}	D_{01}	C_{36}	C_{55}	C_{39}	D_{03}	C_{40}	C_{56}
B_{44}	C_{28}	D_{01}	C_{27}	C_{49}	C_{32}	D_{02}	C_{31}	C_{50}	C_{36}	D_{01}	C_{35}	C_{55}	C_{40}	D_{03}	C_{39}	C_{56}
B_{45}	C_{27}	D_{01}	C_{49}	C_{28}	C_{31}	D_{02}	C_{50}	C_{32}	C_{35}	D_{01}	C_{55}	C_{36}	C_{39}	D_{03}	C_{56}	C_{40}
B_{46}	C_{28}	D_{01}	C_{49}	C_{27}	C_{32}	D_{02}	C_{50}	C_{31}	C_{36}	D_{01}	C_{55}	C_{35}	C_{40}	D_{03}	C_{56}	C_{39}
B_{47}	C_{49}	D_{01}	C_{27}	C_{28}	C_{50}	D_{02}	C_{31}	C_{32}	C_{55}	D_{01}	C_{35}	C_{36}	C_{56}	D_{03}	C_{39}	C_{40}
B_{48}	C_{49}	D_{01}	C_{28}	C_{27}	C_{50}	D_{02}	C_{32}	C_{31}	C_{55}	D_{01}	C_{36}	C_{35}	C_{56}	D_{03}	C_{40}	C_{39}

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
B_{25}	C_{70}	D_{02}	C_{41}	C_{43}	C_{69}	D_{03}	C_{45}	C_{47}	C_{52}	C_{51}	C_{31}	C_{27}	C_{25}	C_{29}	C_{58}	C_{57}
B_{26}	C_{70}	D_{02}	C_{43}	C_{41}	C_{69}	D_{03}	C_{47}	C_{45}	C_{52}	C_{51}	C_{29}	C_{25}	C_{27}	C_{31}	C_{58}	C_{57}
B_{27}	C_{42}	D_{02}	C_{43}	C_{72}	C_{46}	D_{03}	C_{47}	C_{71}	C_{26}	C_{30}	C_{53}	C_{54}	C_{27}	C_{31}	C_{34}	C_{38}
B_{28}	C_{43}	D_{02}	C_{42}	C_{72}	C_{47}	D_{03}	C_{46}	C_{71}	C_{27}	C_{31}	C_{53}	C_{54}	C_{26}	C_{30}	C_{35}	C_{39}
B_{29}	C_{42}	D_{02}	C_{72}	C_{43}	C_{46}	D_{03}	C_{71}	C_{47}	C_{26}	C_{30}	C_{31}	C_{27}	C_{54}	C_{53}	C_{34}	C_{38}
B_{30}	C_{43}	D_{02}	C_{72}	C_{42}	C_{47}	D_{03}	C_{71}	C_{46}	C_{27}	C_{31}	C_{30}	C_{26}	C_{54}	C_{53}	C_{35}	C_{39}
B_{31}	C_{72}	D_{02}	C_{42}	C_{43}	C_{71}	D_{03}	C_{46}	C_{47}	C_{54}	C_{53}	C_{31}	C_{27}	C_{26}	C_{30}	C_{60}	C_{59}
B_{32}	C_{72}	D_{02}	C_{43}	C_{42}	C_{71}	D_{03}	C_{47}	C_{46}	C_{54}	C_{53}	C_{30}	C_{26}	C_{27}	C_{31}	C_{60}	C_{59}
B_{33}	C_{44}	D_{02}	C_{41}	C_{71}	C_{48}	D_{03}	C_{45}	C_{72}	C_{28}	C_{32}	C_{54}	C_{53}	C_{25}	C_{29}	C_{36}	C_{40}
B_{34}	C_{44}	D_{02}	C_{71}	C_{41}	C_{48}	D_{03}	C_{72}	C_{45}	C_{28}	C_{32}	C_{29}	C_{25}	C_{53}	C_{54}	C_{36}	C_{40}
B_{35}	C_{71}	D_{02}	C_{41}	C_{44}	C_{72}	D_{03}	C_{45}	C_{48}	C_{53}	C_{54}	C_{32}	C_{28}	C_{25}	C_{29}	C_{59}	C_{60}
B_{36}	C_{71}	D_{02}	C_{44}	C_{41}	C_{72}	D_{03}	C_{48}	C_{45}	C_{53}	C_{54}	C_{29}	C_{25}	C_{28}	C_{32}	C_{59}	C_{60}
B_{37}	C_{42}	D_{02}	C_{44}	C_{69}	C_{46}	D_{03}	C_{48}	C_{70}	C_{26}	C_{30}	C_{52}	C_{51}	C_{28}	C_{32}	C_{34}	C_{38}
B_{38}	C_{44}	D_{02}	C_{42}	C_{69}	C_{48}	D_{03}	C_{46}	C_{70}	C_{28}	C_{32}	C_{52}	C_{51}	C_{26}	C_{30}	C_{36}	C_{40}
B_{39}	C_{42}	D_{02}	C_{69}	C_{44}	C_{46}	D_{03}	C_{70}	C_{48}	C_{26}	C_{30}	C_{32}	C_{28}	C_{51}	C_{52}	C_{34}	C_{38}
B_{40}	C_{44}	D_{02}	C_{69}	C_{42}	C_{48}	D_{03}	C_{70}	C_{46}	C_{28}	C_{32}	C_{30}	C_{26}	C_{51}	C_{52}	C_{36}	C_{40}
B_{41}	C_{69}	D_{02}	C_{42}	C_{44}	C_{70}	D_{03}	C_{46}	C_{48}	C_{51}	C_{52}	C_{32}	C_{28}	C_{26}	C_{30}	C_{57}	C_{58}
B_{42}	C_{69}	D_{02}	C_{44}	C_{42}	C_{70}	D_{03}	C_{48}	C_{46}	C_{51}	C_{52}	C_{30}	C_{26}	C_{28}	C_{32}	C_{57}	C_{58}
B_{43}	C_{43}	D_{02}	C_{44}	C_{67}	C_{47}	D_{03}	C_{48}	C_{68}	C_{27}	C_{31}	C_{50}	C_{49}	C_{28}	C_{32}	C_{35}	C_{39}
B_{44}	C_{44}	D_{02}	C_{43}	C_{67}	C_{48}	D_{03}	C_{47}	C_{68}	C_{28}	C_{32}	C_{50}	C_{49}	C_{27}	C_{31}	C_{36}	C_{40}
B_{45}	C_{43}	D_{02}	C_{67}	C_{44}	C_{47}	D_{03}	C_{68}	C_{48}	C_{27}	C_{31}	C_{32}	C_{28}	C_{49}	C_{50}	C_{35}	C_{39}
B_{46}	C_{44}	D_{02}	C_{67}	C_{43}	C_{48}	D_{03}	C_{68}	C_{47}	C_{28}	C_{32}	C_{31}	C_{27}	C_{49}	C_{50}	C_{36}	C_{40}
B_{47}	C_{67}	D_{02}	C_{43}	C_{44}	C_{68}	D_{03}	C_{47}	C_{48}	C_{49}	C_{50}	C_{32}	C_{28}	C_{27}	C_{31}	C_{55}	C_{56}
B_{48}	C_{67}	D_{02}	C_{44}	C_{43}	C_{68}	D_{03}	C_{48}	C_{47}	C_{49}	C_{50}	C_{31}	C_{27}	C_{28}	C_{32}	C_{55}	C_{56}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{57}	C_{58}	C_{59}	C_{60}	C_{61}	C_{62}	C_{63}	C_{64}	C_{65}	C_{66}	C_{67}	C_{68}	C_{69}	C_{70}	C_{71}	C_{72}
B_{25}	C_{39}	C_{35}	C_{33}	C_{37}	C_{64}	C_{63}	C_{09}	C_{05}	C_{01}	C_{07}	C_{70}	C_{69}	C_{47}	C_{43}	C_{41}	C_{45}
B_{26}	C_{37}	C_{33}	C_{35}	C_{39}	C_{64}	C_{63}	C_{07}	C_{01}	C_{05}	C_{09}	C_{70}	C_{69}	C_{45}	C_{41}	C_{43}	C_{47}
B_{27}	C_{59}	C_{60}	C_{35}	C_{39}	C_{04}	C_{08}	C_{65}	C_{66}	C_{05}	C_{09}	C_{42}	C_{45}	C_{71}	C_{72}	C_{43}	C_{47}
B_{28}	C_{59}	C_{60}	C_{34}	C_{38}	C_{05}	C_{09}	C_{65}	C_{66}	C_{04}	C_{08}	C_{43}	C_{47}	C_{71}	C_{72}	C_{42}	C_{46}
B_{29}	C_{39}	C_{35}	C_{60}	C_{59}	C_{04}	C_{08}	C_{09}	C_{05}	C_{66}	C_{65}	C_{42}	C_{45}	C_{47}	C_{43}	C_{72}	C_{71}
B_{30}	C_{38}	C_{34}	C_{60}	C_{59}	C_{05}	C_{09}	C_{08}	C_{04}	C_{66}	C_{65}	C_{43}	C_{47}	C_{46}	C_{42}	C_{72}	C_{71}
B_{31}	C_{39}	C_{35}	C_{34}	C_{38}	C_{66}	C_{65}	C_{09}	C_{05}	C_{04}	C_{08}	C_{72}	C_{71}	C_{47}	C_{43}	C_{42}	C_{46}
B_{32}	C_{38}	C_{34}	C_{35}	C_{39}	C_{66}	C_{65}	C_{08}	C_{04}	C_{05}	C_{09}	C_{72}	C_{71}	C_{46}	C_{42}	C_{43}	C_{47}
B_{33}	C_{60}	C_{59}	C_{33}	C_{37}	C_{06}	C_{10}	C_{66}	C_{65}	C_{01}	C_{07}	C_{44}	C_{48}	C_{72}	C_{71}	C_{41}	C_{45}
B_{34}	C_{37}	C_{33}	C_{59}	C_{60}	C_{06}	C_{10}	C_{07}	C_{01}	C_{65}	C_{66}	C_{44}	C_{48}	C_{45}	C_{41}	C_{71}	C_{72}
B_{35}	C_{40}	C_{36}	C_{33}	C_{37}	C_{65}	C_{66}	C_{10}	C_{06}	C_{01}	C_{07}	C_{71}	C_{72}	C_{48}	C_{44}	C_{41}	C_{45}
B_{36}	C_{37}	C_{33}	C_{36}	C_{40}	C_{65}	C_{66}	C_{07}	C_{01}	C_{06}	C_{10}	C_{71}	C_{72}	C_{45}	C_{41}	C_{44}	C_{48}
B_{37}	C_{58}	C_{57}	C_{36}	C_{40}	C_{04}	C_{08}	C_{64}	C_{63}	C_{06}	C_{10}	C_{42}	C_{46}	C_{70}	C_{69}	C_{44}	C_{48}
B_{38}	C_{58}	C_{57}	C_{34}	C_{38}	C_{06}	C_{10}	C_{64}	C_{63}	C_{04}	C_{08}	C_{44}	C_{48}	C_{70}	C_{69}	C_{42}	C_{46}
B_{39}	C_{40}	C_{36}	C_{57}	C_{58}	C_{04}	C_{08}	C_{10}	C_{06}	C_{63}	C_{64}	C_{42}	C_{46}	C_{48}	C_{44}	C_{69}	C_{70}
B_{40}	C_{38}	C_{34}	C_{57}	C_{58}	C_{06}	C_{10}	C_{08}	C_{04}	C_{63}	C_{64}	C_{44}	C_{48}	C_{46}	C_{42}	C_{69}	C_{70}
B_{41}	C_{40}	C_{36}	C_{34}	C_{38}	C_{63}	C_{64}	C_{10}	C_{06}	C_{04}	C_{08}	C_{69}	C_{70}	C_{48}	C_{44}	C_{42}	C_{46}
B_{42}	C_{38}	C_{34}	C_{36}	C_{40}	C_{63}	C_{64}	C_{08}	C_{04}	C_{06}	C_{10}	C_{69}	C_{70}	C_{46}	C_{42}	C_{44}	C_{48}
B_{43}	C_{56}	C_{55}	C_{36}	C_{40}	C_{05}	C_{09}	C_{62}	C_{61}	C_{06}	C_{10}	C_{43}	C_{47}	C_{68}	C_{67}	C_{44}	C_{48}
B_{44}	C_{56}	C_{55}	C_{35}	C_{39}	C_{06}	C_{10}	C_{62}	C_{61}	C_{05}	C_{09}	C_{44}	C_{48}	C_{68}	C_{67}	C_{43}	C_{47}
B_{45}	C_{40}	C_{36}	C_{55}	C_{56}	C_{05}	C_{09}	C_{10}	C_{06}	C_{61}	C_{62}	C_{43}	C_{47}	C_{48}	C_{44}	C_{67}	C_{68}
B_{46}	C_{39}	C_{35}	C_{55}	C_{56}	C_{06}	C_{10}	C_{09}	C_{05}	C_{61}	C_{62}	C_{44}	C_{48}	C_{47}	C_{43}	C_{67}	C_{68}
B_{47}	C_{40}	C_{36}	C_{35}	C_{39}	C_{61}	C_{62}	C_{10}	C_{06}	C_{05}	C_{09}	C_{67}	C_{68}	C_{48}	C_{44}	C_{43}	C_{47}
B_{48}	C_{39}	C_{35}	C_{36}	C_{40}	C_{61}	C_{62}	C_{09}	C_{05}	C_{06}	C_{10}	C_{67}	C_{68}	C_{47}	C_{43}	C_{44}	C_{48}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{73}	c_{74}	c_{75}	c_{76}	c_{77}	c_{78}	c_{79}	c_{80}	c_{81}	c_{82}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{25}	c_{76}	c_{75}	c_{16}	c_{12}	c_{02}	c_{14}	c_{32}	c_{81}	c_{23}	c_{19}	c_{03}	c_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{26}	c_{76}	c_{75}	c_{14}	c_{02}	c_{12}	c_{16}	c_{82}	c_{81}	c_{21}	c_{03}	c_{19}	c_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{27}	c_{11}	c_{14}	c_{77}	c_{78}	c_{12}	c_{16}	c_{18}	c_{22}	c_{83}	c_{84}	c_{19}	c_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{28}	c_{12}	c_{16}	c_{77}	c_{78}	c_{11}	c_{14}	c_{19}	c_{23}	c_{83}	c_{84}	c_{18}	c_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{29}	c_{11}	c_{14}	c_{16}	c_{12}	c_{78}	c_{77}	c_{18}	c_{22}	c_{23}	c_{19}	c_{84}	c_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{30}	c_{12}	c_{16}	c_{15}	c_{11}	c_{78}	c_{77}	c_{19}	c_{23}	c_{22}	c_{18}	c_{84}	c_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{31}	c_{78}	c_{77}	c_{16}	c_{12}	c_{11}	c_{15}	c_{84}	c_{83}	c_{23}	c_{19}	c_{18}	c_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{32}	c_{78}	c_{77}	c_{15}	c_{11}	c_{12}	c_{16}	c_{84}	c_{83}	c_{22}	c_{18}	c_{19}	c_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{33}	c_{13}	c_{17}	c_{78}	c_{77}	c_{02}	c_{14}	c_{20}	c_{24}	c_{84}	c_{83}	c_{03}	c_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{34}	c_{13}	c_{17}	c_{14}	c_{02}	c_{77}	c_{78}	c_{20}	c_{24}	c_{21}	c_{03}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{35}	c_{77}	c_{78}	c_{17}	c_{13}	c_{02}	c_{14}	c_{83}	c_{84}	c_{24}	c_{20}	c_{03}	c_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{36}	c_{77}	c_{78}	c_{14}	c_{02}	c_{13}	c_{17}	c_{83}	c_{84}	c_{21}	c_{03}	c_{20}	c_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{37}	c_{11}	c_{15}	c_{76}	c_{75}	c_{13}	c_{17}	c_{18}	c_{22}	c_{82}	c_{81}	c_{20}	c_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{38}	c_{13}	c_{17}	c_{76}	c_{75}	c_{11}	c_{15}	c_{20}	c_{24}	c_{82}	c_{81}	c_{18}	c_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{39}	c_{11}	c_{15}	c_{17}	c_{13}	c_{75}	c_{76}	c_{18}	c_{22}	c_{24}	c_{20}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{40}	c_{13}	c_{17}	c_{15}	c_{11}	c_{75}	c_{76}	c_{20}	c_{24}	c_{22}	c_{18}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{41}	c_{75}	c_{76}	c_{17}	c_{13}	c_{11}	c_{15}	c_{81}	c_{82}	c_{24}	c_{20}	c_{18}	c_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{42}	c_{75}	c_{76}	c_{15}	c_{11}	c_{13}	c_{17}	c_{81}	c_{82}	c_{22}	c_{18}	c_{20}	c_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{43}	c_{12}	c_{16}	c_{74}	c_{73}	c_{13}	c_{17}	c_{19}	c_{23}	c_{80}	c_{79}	c_{20}	c_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{44}	c_{13}	c_{17}	c_{74}	c_{73}	c_{12}	c_{16}	c_{20}	c_{24}	c_{80}	c_{79}	c_{19}	c_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{45}	c_{12}	c_{16}	c_{17}	c_{13}	c_{73}	c_{74}	c_{19}	c_{23}	c_{24}	c_{20}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{46}	c_{13}	c_{17}	c_{16}	c_{12}	c_{73}	c_{74}	c_{20}	c_{24}	c_{23}	c_{19}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{47}	c_{73}	c_{74}	c_{17}	c_{13}	c_{12}	c_{16}	c_{79}	c_{80}	c_{24}	c_{20}	c_{19}	c_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{48}	c_{73}	c_{74}	c_{16}	c_{12}	c_{13}	c_{17}	c_{79}	c_{80}	c_{23}	c_{19}	c_{20}	c_{24}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{49}	B_{49}	B_{21}	B_{81}	B_{22}	B_{82}	B_{50}	B_{12}	B'_{14}	B_{04}	B'_{12}	B_{18}	B'_{15}	B_{03}	B'_{10}	B_{14}	B'_{13}
B_{50}	B_{50}	B_{22}	B_{82}	B_{21}	B_{81}	B_{49}	B_{56}	B'_{15}	B_{20}	B'_{13}	B_{80}	B'_{14}	B_{19}	B'_{11}	B_{79}	B'_{12}
B_{51}	B_{51}	B_{25}	B_{85}	B_{26}	B_{86}	B_{52}	B_{10}	B'_{20}	B_{06}	B'_{18}	B_{13}	B'_{21}	B_{02}	B'_{16}	B_{16}	B'_{19}
B_{52}	B_{52}	B_{26}	B_{86}	B_{25}	B_{85}	B_{51}	B_{54}	B'_{21}	B_{24}	B'_{19}	B_{84}	B'_{20}	B_{23}	B'_{17}	B_{83}	B'_{18}
B_{53}	B_{53}	B_{23}	B_{83}	B_{24}	B_{84}	B_{54}	B_{09}	B'_{17}	B_{02}	B'_{16}	B_{16}	B'_{19}	B_{06}	B'_{18}	B_{13}	B'_{21}
B_{54}	B_{54}	B_{24}	B_{84}	B_{23}	B_{83}	B_{53}	B_{52}	B'_{19}	B_{26}	B'_{21}	B_{86}	B'_{17}	B_{25}	B'_{20}	B_{85}	B'_{16}
B_{55}	B_{55}	B_{19}	B_{79}	B_{20}	B_{80}	B_{56}	B_{08}	B'_{11}	B_{03}	B'_{10}	B_{14}	B'_{13}	B_{04}	B'_{12}	B_{18}	B'_{15}
B_{56}	B_{56}	B_{20}	B_{80}	B_{19}	B_{79}	B_{55}	B_{50}	B'_{13}	B_{22}	B'_{15}	B_{82}	B'_{11}	B_{21}	B'_{14}	B_{81}	B'_{10}
B_{57}	B_{57}	B_{27}	B_{87}	B_{29}	B_{89}	B_{59}	B_{58}	B'_{22}	B_{28}	B'_{23}	B_{88}	B'_{24}	B_{30}	B'_{25}	B_{90}	B'_{26}
B_{58}	B_{58}	B_{28}	B_{88}	B_{30}	B_{90}	B_{60}	B_{57}	B'_{23}	B_{27}	B'_{22}	B_{87}	B'_{25}	B_{29}	B'_{24}	B_{89}	B'_{27}
B_{59}	B_{59}	B_{29}	B_{89}	B_{27}	B_{87}	B_{57}	B_{61}	B'_{24}	B_{31}	B'_{26}	B_{91}	B'_{22}	B_{32}	B'_{27}	B_{92}	B'_{23}
B_{60}	B_{60}	B_{30}	B_{90}	B_{28}	B_{88}	B_{58}	B_{62}	B'_{25}	B_{32}	B'_{27}	B_{92}	B'_{23}	B_{31}	B'_{26}	B_{91}	B'_{22}
B_{61}	B_{61}	B_{31}	B_{91}	B_{32}	B_{92}	B_{62}	B_{59}	B'_{26}	B_{29}	B'_{24}	B_{89}	B'_{27}	B_{27}	B'_{22}	B_{87}	B'_{25}
B_{62}	B_{62}	B_{32}	B_{92}	B_{31}	B_{91}	B_{61}	B_{60}	B'_{27}	B_{30}	B'_{25}	B_{90}	B'_{26}	B_{28}	B'_{23}	B_{88}	B'_{24}
B_{63}	B_{63}	B_{33}	B_{93}	B_{34}	B_{94}	B_{64}	B_{11}	B'_{29}	B_{05}	B'_{28}	B_{15}	B'_{31}	B_{01}	B'_{30}	B_{17}	B'_{33}
B_{64}	B_{64}	B_{34}	B_{94}	B_{33}	B_{93}	B_{63}	B_{66}	B'_{31}	B_{36}	B'_{33}	B_{96}	B'_{29}	B_{35}	B'_{32}	B_{95}	B'_{28}
B_{65}	B_{65}	B_{35}	B_{95}	B_{36}	B_{96}	B_{66}	B_{07}	B'_{32}	B_{01}	B'_{30}	B_{17}	B'_{33}	B_{05}	B'_{28}	B_{15}	B'_{31}
B_{66}	B_{66}	B_{36}	B_{96}	B_{35}	B_{95}	B_{65}	B_{64}	B'_{33}	B_{34}	B'_{31}	B_{94}	B'_{32}	B_{33}	B'_{29}	B_{93}	B'_{30}
B_{67}	B_{67}	B_{37}	B_{97}	B_{39}	B_{99}	B_{69}	B_{68}	B'_{34}	B_{38}	B'_{35}	B_{98}	B'_{36}	B_{40}	B'_{37}	B'_{01}	B'_{38}
B_{68}	B_{68}	B_{38}	B_{98}	B_{40}	B'_{01}	B_{70}	B_{67}	B'_{35}	B_{37}	B'_{34}	B_{97}	B'_{37}	B_{39}	B'_{36}	B_{99}	B'_{39}
B_{69}	B_{69}	B_{39}	B_{99}	B_{37}	B_{97}	B_{67}	B_{71}	B'_{36}	B_{41}	B'_{38}	B'_{02}	B'_{34}	B_{42}	B'_{39}	B'_{03}	B'_{35}
B_{70}	B_{70}	B_{40}	B'_{01}	B_{38}	B_{98}	B_{68}	B_{72}	B'_{37}	B_{42}	B'_{39}	B'_{03}	B'_{35}	B_{41}	B'_{38}	B'_{02}	B'_{34}
B_{71}	B_{71}	B_{41}	B'_{02}	B_{42}	B'_{03}	B_{72}	B_{69}	B'_{38}	B_{39}	B'_{36}	B_{99}	B'_{39}	B_{37}	B'_{34}	B_{97}	B'_{37}
B_{72}	B_{72}	B_{42}	B'_{03}	B_{41}	B'_{02}	B_{71}	B_{70}	B'_{39}	B_{40}	B'_{37}	B'_{01}	B'_{38}	B_{38}	B'_{35}	B_{98}	B'_{36}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
A_{49}	$B_{..}$	B_{11}	$B_{..}$	B_{79}	B_{56}	B_{20}	B_{55}	B_{19}	B_{21}	C_{62}	B_{21}	B_{22}	B_{22}	C_{74}	B_{49}	B_{49}
B_{50}	B_{55}	A_{10}	B_{18}	B_{14}	B_{12}	B_{04}	B_{08}	B_{03}	B_{22}	C_{62}	B_{22}	B_{21}	B_{21}	C_{74}	B_{50}	B_{50}
A_{51}	$B_{..}$	B_{17}	B_{04}	B_{83}	B_{54}	B_{24}	B_{53}	B_{23}	B_{25}	C_{64}	B_{25}	B_{26}	B_{26}	C_{76}	B_{51}	B_{51}
B_{52}	B_{53}	B_{16}	B_{13}	B_{16}	B_{10}	B_{06}	B_{09}	B_{02}	B_{26}	C_{64}	B_{26}	B_{25}	B_{25}	C_{76}	B_{52}	B_{52}
b_{53}	B_{15}	B_{20}	B_{36}	B_{85}	B_{52}	B_{26}	B_{51}	B_{25}	B_{23}	C_{05}	B_{23}	B_{24}	B_{24}	C_{12}	B_{53}	B_{53}
B_{54}	B_{51}	B_{18}	B_{16}	B_{13}	B_{09}	B_{02}	B_{10}	B_{06}	B_{24}	C_{05}	B_{24}	B_{23}	B_{23}	C_{12}	B_{54}	B_{54}
B_{55}	B_{12}	B_{14}	B_{32}	B_{81}	B_{50}	B_{22}	B_{49}	B_{21}	B_{19}	C_{04}	B_{19}	B_{20}	B_{20}	C_{11}	B_{55}	B_{55}
B_{56}	B_{49}	B_{12}	B_{14}	B_{18}	B_{08}	B_{03}	B_{12}	B_{04}	B_{20}	C_{04}	B_{20}	B_{19}	B_{19}	C_{11}	B_{56}	B_{56}
B_{57}	B_{60}	B_{27}	B_{91}	B_{92}	B_{61}	B_{31}	B_{62}	B_{32}	B_{27}	C_{04}	B_{27}	B_{29}	B_{29}	C_{11}	B_{57}	B_{57}
B_{58}	B_{59}	B_{26}	B_{92}	B_{91}	B_{62}	B_{32}	B_{61}	B_{31}	B_{28}	C_{05}	B_{28}	B_{30}	B_{30}	C_{12}	B_{58}	B_{58}
B_{59}	B_{62}	B_{25}	B_{88}	B_{90}	B_{58}	B_{21}	B_{60}	B_{30}	B_{29}	C_{04}	B_{29}	B_{27}	B_{27}	C_{11}	B_{59}	B_{59}
B_{60}	B_{61}	B_{24}	B_{87}	B_{89}	B_{57}	B_{27}	B_{59}	B_{29}	B_{30}	C_{05}	B_{30}	B_{28}	B_{28}	C_{12}	B_{60}	B_{60}
B_{61}	B_{57}	B_{23}	B_{90}	B_{88}	B_{60}	B_{30}	B_{58}	B_{28}	B_{31}	C_{66}	B_{31}	B_{32}	B_{32}	C_{78}	B_{61}	B_{61}
B_{62}	B_{58}	B_{22}	B_{39}	B_{87}	B_{59}	B_{29}	B_{57}	B_{27}	B_{32}	C_{66}	B_{32}	B_{31}	B_{31}	C_{78}	B_{62}	B_{62}
B_{63}	B_{07}	B_{32}	B_{96}	B_{95}	B_{66}	B_{36}	B_{65}	B_{35}	B_{33}	C_{06}	B_{33}	B_{34}	B_{34}	C_{13}	B_{63}	B_{63}
B_{64}	B_{65}	B_{30}	B_{15}	B_{17}	B_{11}	B_{05}	B_{07}	B_{01}	B_{34}	C_{06}	B_{34}	B_{33}	B_{33}	C_{13}	B_{64}	B_{64}
B_{65}	B_{11}	B_{29}	B_{94}	B_{93}	B_{64}	B_{34}	B_{63}	B_{33}	B_{35}	C_{65}	B_{35}	B_{36}	B_{36}	C_{77}	B_{65}	B_{65}
B_{66}	B_{63}	B_{28}	B_{17}	B_{15}	B_{07}	B_{01}	B_{11}	B_{05}	B_{36}	C_{65}	B_{36}	B_{35}	B_{35}	C_{77}	B_{66}	B_{66}
B_{67}	B_{70}	B_{39}	B_{02}	B_{03}	B_{71}	B_{41}	B_{72}	B_{42}	B_{37}	C_{04}	B_{37}	B_{39}	B_{39}	C_{11}	B_{67}	B_{67}
B_{68}	B_{69}	B_{38}	B_{03}	B_{02}	B_{72}	B_{42}	B_{71}	B_{41}	B_{38}	C_{06}	B_{38}	B_{40}	B_{40}	C_{13}	B_{68}	B_{68}
B_{69}	B_{72}	B_{37}	B_{98}	B_{01}	B_{68}	B_{38}	B_{70}	B_{40}	B_{39}	C_{04}	B_{39}	B_{37}	B_{37}	C_{11}	B_{69}	B_{69}
B_{70}	B_{71}	B_{36}	B_{97}	B_{99}	B_{67}	B_{37}	B_{69}	B_{39}	B_{40}	C_{06}	B_{40}	B_{38}	B_{38}	C_{13}	B_{70}	B_{70}
B_{71}	B_{67}	B_{35}	B_{01}	B_{98}	B_{70}	B_{40}	B_{68}	B_{38}	B_{41}	C_{63}	B_{41}	B_{42}	B_{42}	C_{75}	B_{71}	B_{71}
B_{72}	B_{68}	B_{34}	B_{99}	B_{97}	B_{69}	B_{39}	B_{67}	B_{37}	B_{42}	C_{63}	B_{42}	B_{41}	B_{41}	C_{75}	B_{72}	B_{72}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B_{49}	C_{62}	C_{80}	B_{50}	B_{50}	C_{80}	B_{81}	B_{82}	C_{74}	B_{81}	B_{82}	B_{04}	B_{03}	B_{20}	B_{19}	C_{50}	C_{49}
B_{50}	C_{62}	C_{80}	B_{49}	B_{49}	C_{80}	B_{82}	B_{81}	C_{74}	B_{82}	B_{81}	B_{20}	B_{19}	B_{04}	B_{03}	C_{50}	C_{49}
B_{51}	C_{64}	C_{82}	B_{52}	B_{52}	C_{82}	B_{85}	B_{86}	C_{76}	B_{85}	B_{86}	B_{06}	B_{02}	B_{24}	B_{23}	C_{52}	C_{51}
B_{52}	C_{64}	C_{82}	B_{51}	B_{51}	C_{82}	B_{86}	B_{85}	C_{76}	B_{86}	B_{85}	B_{24}	B_{23}	B_{06}	B_{02}	C_{52}	C_{51}
B_{53}	C_{05}	C_{19}	B_{54}	B_{54}	C_{19}	B_{83}	B_{84}	C_{12}	B_{83}	B_{84}	B_{02}	B_{06}	B_{26}	B_{25}	C_{27}	C_{31}
B_{54}	C_{05}	C_{19}	B_{53}	B_{53}	C_{19}	B_{84}	B_{83}	C_{12}	B_{84}	B_{83}	B_{26}	B_{25}	B_{02}	B_{06}	C_{27}	C_{31}
B_{55}	C_{04}	C_{18}	B_{56}	B_{56}	C_{18}	B_{79}	B_{80}	C_{11}	B_{79}	F_{80}	F_{03}	F_{04}	F_{22}	B_{21}	C_{26}	C_{30}
B_{56}	C_{04}	C_{18}	B_{55}	B_{55}	C_{18}	B_{80}	B_{79}	C_{11}	B_{80}	B_{79}	B_{22}	B_{21}	B_{03}	B_{04}	C_{26}	C_{30}
B_{57}	C_{04}	C_{18}	B_{59}	B_{59}	C_{18}	B_{87}	B_{89}	C_{11}	B_{87}	B_{89}	B_{28}	B_{30}	B_{31}	B_{32}	C_{26}	C_{30}
B_{58}	C_{05}	C_{19}	B_{60}	B_{60}	C_{19}	B_{88}	B_{90}	C_{12}	B_{88}	B_{90}	B_{27}	B_{29}	B_{32}	B_{31}	C_{27}	C_{31}
B_{59}	C_{04}	C_{18}	B_{57}	B_{57}	C_{18}	B_{89}	B_{87}	C_{11}	B_{89}	B_{87}	B_{31}	B_{32}	B_{21}	B_{30}	C_{26}	C_{30}
B_{60}	C_{05}	C_{19}	B_{58}	B_{58}	C_{19}	B_{90}	B_{88}	C_{12}	B_{90}	B_{88}	B_{32}	B_{31}	B_{27}	B_{29}	C_{27}	C_{31}
B_{61}	C_{66}	C_{84}	B_{62}	B_{62}	C_{84}	B_{91}	B_{92}	C_{78}	B_{91}	B_{92}	B_{29}	B_{27}	B_{30}	B_{28}	C_{54}	C_{53}
B_{62}	C_{66}	C_{84}	B_{61}	B_{61}	C_{84}	B_{92}	B_{91}	C_{78}	B_{92}	B_{91}	B_{30}	B_{28}	B_{29}	B_{27}	C_{54}	C_{53}
B_{63}	C_{06}	C_{20}	B_{64}	B_{64}	C_{20}	B_{93}	B_{94}	C_{13}	B_{93}	B_{94}	B_{05}	B_{01}	B_{36}	B_{35}	C_{28}	C_{32}
B_{64}	C_{06}	C_{20}	B_{63}	B_{63}	C_{20}	B_{94}	B_{93}	C_{13}	B_{94}	B_{93}	B_{36}	B_{35}	B_{05}	B_{01}	C_{28}	C_{32}
B_{65}	C_{65}	C_{83}	B_{66}	B_{66}	C_{83}	B_{95}	B_{96}	C_{77}	B_{95}	B_{96}	B_{01}	B_{05}	B_{34}	B_{33}	C_{53}	C_{54}
B_{66}	C_{65}	C_{83}	B_{65}	B_{65}	C_{83}	B_{96}	B_{95}	C_{77}	B_{96}	B_{95}	B_{34}	B_{33}	B_{01}	B_{05}	C_{53}	C_{54}
B_{67}	C_{04}	C_{18}	B_{69}	B_{69}	C_{18}	B_{97}	B_{99}	C_{11}	B_{97}	B_{99}	B_{38}	B_{40}	B_{41}	B_{42}	C_{26}	C_{30}
B_{68}	C_{06}	C_{20}	B_{70}	B_{70}	C_{20}	B_{98}	B^{1}_{01}	C_{13}	B_{98}	B^{1}_{01}	B_{37}	B_{39}	B_{42}	B_{41}	C_{28}	C_{32}
B_{69}	C_{04}	C_{18}	B_{67}	B_{67}	C_{18}	B_{99}	B_{97}	C_{11}	B_{99}	B_{97}	B_{41}	B_{42}	B_{38}	B_{40}	C_{26}	C_{30}
B_{70}	C_{06}	C_{20}	B_{68}	B_{68}	C_{20}	B^{1}_{01}	B_{98}	C_{13}	B^{1}_{01}	B_{98}	B_{42}	B_{41}	B_{37}	B_{39}	C_{28}	C_{32}
B_{71}	C_{63}	C_{81}	B_{72}	B_{72}	C_{81}	B^{1}_{02}	B^{1}_{03}	C_{75}	B^{1}_{02}	B^{1}_{03}	B_{39}	B_{37}	B_{40}	B_{38}	C_{51}	C_{52}
B_{72}	C_{63}	C_{81}	B_{71}	B_{71}	C_{81}	B^{1}_{03}	B^{1}_{02}	C_{75}	B^{1}_{03}	B^{1}_{02}	B_{40}	B_{38}	B_{39}	B_{37}	C_{51}	C_{52}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{49}	C_{73}	C_{61}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{20}	B_{19}	B_{04}	B_{03}	B_{03}	B_{19}	B_{04}	B_{20}
B_{50}	C_{73}	C_{61}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{04}	B_{03}	B_{20}	B_{19}	B_{19}	B_{03}	B_{20}	B_{04}
B_{51}	C_{75}	C_{63}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{24}	B_{23}	B_{06}	B_{02}	B_{02}	B_{23}	B_{06}	B_{24}
B_{52}	C_{75}	C_{63}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{06}	B_{02}	B_{24}	B_{23}	B_{23}	B_{02}	B_{24}	B_{06}
B_{53}	C_{16}	C_{09}	C_{01}	C_{26}	C_{02}	C_{29}	C_{14}	C_{07}	B_{26}	B_{25}	B_{02}	B_{06}	F_{06}	F_{25}	E_{02}	B_{26}
B_{54}	C_{16}	C_{09}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	B_{02}	B_{06}	B_{26}	B_{25}	B_{25}	B_{06}	B_{26}	B_{02}
B_{55}	C_{15}	C_{08}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{22}	B_{21}	B_{03}	B_{04}	B_{04}	B_{21}	B_{03}	B_{22}
B_{56}	C_{15}	C_{08}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	B_{03}	B_{04}	B_{22}	B_{21}	B_{21}	B_{04}	B_{22}	B_{03}
B_{57}	C_{15}	C_{08}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{31}	B_{32}	B_{28}	B_{30}	B_{30}	B_{32}	B_{28}	B_{31}
B_{58}	C_{16}	C_{09}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{32}	B_{31}	B_{27}	B_{29}	B_{29}	B_{31}	B_{27}	B_{32}
B_{59}	C_{15}	C_{08}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	P_{21}	P_{30}	B_{31}	P_{32}	B_{32}	B_{30}	B_{31}	B_{21}
B_{60}	C_{16}	C_{09}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	B_{27}	B_{29}	B_{32}	B_{31}	B_{31}	B_{29}	B_{32}	B_{27}
B_{61}	C_{77}	C_{65}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{30}	B_{28}	B_{29}	B_{27}	B_{27}	B_{28}	B_{29}	B_{30}
B_{62}	C_{77}	C_{65}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{29}	B_{27}	B_{30}	B_{28}	B_{28}	B_{27}	B_{30}	B_{29}
B_{63}	C_{17}	C_{10}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{36}	B_{35}	B_{05}	B_{01}	B_{01}	B_{35}	B_{05}	B_{36}
B_{64}	C_{17}	C_{10}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	B_{05}	B_{01}	B_{36}	B_{35}	B_{35}	B_{01}	B_{36}	B_{05}
B_{65}	C_{78}	C_{66}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{34}	B_{33}	B_{01}	B_{05}	B_{05}	B_{33}	B_{01}	B_{34}
B_{66}	C_{78}	C_{66}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{01}	B_{05}	B_{34}	B_{33}	B_{33}	B_{05}	B_{34}	B_{01}
B_{67}	C_{15}	C_{08}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{41}	B_{42}	B_{38}	B_{40}	B_{40}	B_{42}	B_{38}	B_{41}
B_{68}	C_{17}	C_{10}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{42}	B_{41}	B_{37}	B_{39}	B_{39}	B_{41}	B_{37}	B_{42}
B_{69}	C_{15}	C_{08}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	B_{38}	B_{40}	B_{41}	B_{42}	B_{42}	B_{40}	B_{41}	B_{38}
B_{70}	C_{17}	C_{10}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	B_{37}	B_{39}	B_{42}	B_{41}	B_{41}	B_{39}	B_{42}	B_{37}
B_{71}	C_{76}	C_{64}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{40}	B_{38}	B_{39}	B_{37}	B_{37}	B_{38}	B_{39}	B_{40}
B_{72}	C_{76}	C_{64}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{39}	B_{37}	B_{40}	B_{38}	B_{38}	B_{37}	B_{40}	B_{39}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{49}	B_{21}	B_{22}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{56}	B_{55}	C_{79}	C_{61}	C_{56}	C_{55}	B_{12}	B_{08}
B_{50}	B_{22}	B_{21}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{12}	B_{08}	C_{79}	C_{61}	C_{56}	C_{55}	B_{56}	B_{55}
B_{51}	B_{25}	B_{26}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{54}	B_{53}	C_{81}	C_{63}	C_{58}	C_{57}	B_{10}	B_{09}
B_{52}	B_{26}	B_{25}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{10}	B_{09}	C_{81}	C_{63}	C_{58}	C_{57}	B_{54}	B_{53}
B_{53}	B_{23}	B_{24}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	B_{52}	B_{51}	C_{23}	C_{09}	C_{35}	C_{39}	B_{09}	B_{10}
B_{54}	B_{24}	B_{23}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{09}	B_{10}	C_{23}	C_{09}	C_{35}	C_{39}	B_{52}	B_{51}
B_{55}	B_{19}	B_{20}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	B_{50}	B_{49}	C_{22}	C_{08}	C_{34}	C_{38}	B_{08}	B_{12}
B_{56}	B_{20}	B_{19}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{08}	B_{12}	C_{22}	C_{08}	C_{34}	C_{38}	B_{50}	B_{49}
B_{57}	B_{27}	B_{29}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	B_{61}	B_{62}	C_{22}	C_{08}	C_{34}	C_{38}	B_{58}	B_{60}
B_{58}	B_{28}	B_{30}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	B_{62}	B_{61}	C_{23}	C_{09}	C_{35}	C_{39}	B_{57}	B_{59}
B_{59}	B_{29}	B_{27}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{58}	B_{60}	C_{22}	C_{08}	C_{34}	C_{38}	B_{61}	B_{62}
B_{60}	B_{30}	B_{28}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{57}	B_{59}	C_{23}	C_{09}	C_{35}	C_{39}	B_{62}	B_{61}
B_{61}	B_{31}	B_{32}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{60}	B_{58}	C_{83}	C_{65}	C_{60}	C_{59}	B_{59}	B_{57}
B_{62}	B_{32}	B_{31}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{59}	B_{57}	C_{83}	C_{65}	C_{60}	C_{59}	B_{60}	B_{58}
B_{63}	B_{33}	B_{34}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	B_{66}	B_{65}	C_{24}	C_{10}	C_{36}	C_{40}	B_{11}	B_{07}
B_{64}	B_{34}	B_{33}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{11}	B_{07}	C_{24}	C_{10}	C_{36}	C_{40}	B_{66}	B_{65}
B_{65}	B_{35}	B_{36}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{64}	B_{63}	C_{84}	C_{66}	C_{59}	C_{60}	B_{07}	B_{11}
B_{66}	B_{36}	B_{35}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	B_{07}	B_{11}	C_{84}	C_{66}	C_{59}	C_{60}	B_{64}	B_{63}
B_{67}	B_{37}	B_{39}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	B_{71}	B_{72}	C_{22}	C_{08}	C_{34}	C_{38}	B_{68}	B_{70}
B_{68}	B_{38}	B_{40}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	B_{72}	B_{71}	C_{24}	C_{10}	C_{36}	C_{40}	B_{67}	B_{69}
B_{69}	B_{39}	B_{37}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{68}	B_{70}	C_{22}	C_{08}	C_{34}	C_{38}	B_{71}	B_{72}
B_{70}	B_{40}	B_{38}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{67}	B_{69}	C_{24}	C_{10}	C_{36}	C_{40}	B_{72}	B_{71}
B_{71}	B_{41}	B_{42}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{70}	B_{68}	C_{82}	C_{64}	C_{57}	C_{58}	B_{69}	B_{67}
B_{72}	B_{42}	B_{41}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	B_{69}	B_{67}	C_{82}	C_{64}	C_{57}	C_{58}	B_{70}	B_{68}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{49}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{56}	B_{55}	B_{12}	B_{08}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}
B_{50}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{12}	B_{08}	B_{56}	B_{55}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}
B_{51}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{54}	B_{53}	B_{10}	B_{09}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}
B_{52}	C_{05}	C_{57}	C_{19}	C_{39}	C_{23}	C_{09}	B_{10}	B_{09}	B_{54}	B_{53}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}
B_{53}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{52}	B_{51}	B_{09}	B_{10}	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}
B_{54}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	B_{09}	B_{10}	B_{52}	B_{51}	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}
B_{55}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{50}	B_{49}	B_{08}	B_{12}	B_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}
B_{56}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	B_{08}	B_{12}	B_{50}	B_{49}	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}
B_{57}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{61}	B_{62}	B_{58}	B_{60}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}
B_{58}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{62}	B_{61}	B_{57}	B_{59}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}
B_{59}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	B_{58}	B_{60}	B_{61}	B_{62}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}
B_{60}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	B_{57}	B_{59}	B_{62}	B_{61}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}
B_{61}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{60}	B_{58}	B_{59}	B_{57}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}
B_{62}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{59}	B_{57}	B_{60}	B_{58}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}
B_{63}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{66}	B_{65}	B_{11}	B_{07}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}
B_{64}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	B_{11}	B_{07}	B_{66}	B_{65}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}
B_{65}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{64}	B_{63}	B_{07}	B_{11}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}
B_{66}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{07}	B_{11}	B_{64}	B_{63}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}
B_{67}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{71}	B_{72}	B_{68}	B_{70}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}
B_{68}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{72}	B_{71}	B_{67}	B_{69}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}
B_{69}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	B_{68}	B_{70}	B_{71}	B_{72}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}
B_{70}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	B_{67}	B_{69}	B_{72}	B_{71}	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}
B_{71}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{70}	B_{68}	B_{69}	B_{67}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{72}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{69}	B_{67}	B_{70}	B_{68}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B_{49}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	$\bar{B}_{18}$	B_{14}	B_{80}	B_{79}	C_{68}	C_{67}	C_{79}	C_{73}	C_{02}	C_{41}
B_{50}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{80}	B_{79}	B_{18}	B_{14}	C_{68}	C_{67}	C_{79}	C_{73}	C_{11}	C_{42}
B_{51}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{13}	B_{16}	B_{84}	B_{83}	C_{70}	C_{69}	C_{81}	C_{75}	C_{02}	C_{41}
B_{52}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{84}	B_{83}	B_{13}	B_{16}	C_{70}	C_{69}	C_{81}	C_{75}	C_{12}	C_{43}
B_{53}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}	B_{16}	B_{13}	B_{86}	B_{85}	C_{43}	C_{47}	C_{23}	C_{16}	C_{02}	C_{41}
B_{54}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{86}	B_{85}	B_{16}	B_{13}	C_{43}	C_{47}	C_{23}	C_{16}	C_{76}	C_{70}
B_{55}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}	B_{14}	B_{18}	B_{82}	B_{81}	C_{42}	C_{46}	C_{22}	C_{15}	C_{02}	C_{41}
B_{56}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{82}	B_{81}	B_{14}	B_{18}	C_{42}	C_{46}	C_{22}	C_{15}	C_{74}	C_{68}
B_{57}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}	B_{88}	B_{90}	B_{91}	B_{92}	C_{42}	C_{46}	C_{22}	C_{15}	C_{12}	C_{43}
B_{58}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}	B_{87}	B_{89}	B_{92}	B_{91}	C_{43}	C_{47}	C_{23}	C_{16}	C_{11}	C_{42}
B_{59}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{91}	B_{92}	B_{88}	B_{90}	C_{42}	C_{46}	C_{22}	C_{15}	C_{78}	C_{72}
B_{60}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{92}	B_{91}	B_{87}	B_{89}	C_{43}	C_{47}	C_{23}	C_{16}	C_{78}	C_{72}
B_{61}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B_{89}	B_{87}	B_{90}	B_{88}	C_{72}	C_{71}	C_{83}	C_{77}	C_{11}	C_{42}
B_{62}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B_{90}	B_{88}	B_{89}	B_{87}	C_{72}	C_{71}	C_{83}	C_{77}	C_{12}	C_{43}
B_{63}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}	B_{15}	B_{17}	B_{96}	B_{95}	C_{44}	C_{48}	C_{24}	C_{17}	C_{02}	C_{41}
B_{64}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{96}	B_{95}	B_{15}	B_{17}	C_{44}	C_{48}	C_{24}	C_{17}	C_{77}	C_{71}
B_{65}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{17}	B_{15}	B_{94}	B_{93}	C_{71}	C_{72}	C_{84}	C_{78}	C_{02}	C_{41}
B_{66}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	B_{94}	B_{93}	B_{17}	B_{15}	C_{71}	C_{72}	C_{84}	C_{78}	C_{13}	C_{44}
B_{67}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}	B_{98}	B'_{01}	B'_{02}	B'_{03}	C_{42}	C_{46}	C_{22}	C_{15}	C_{13}	C_{44}
B_{68}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}	B_{97}	B_{99}	B'_{03}	B'_{02}	C_{44}	C_{48}	C_{24}	C_{17}	C_{11}	C_{42}
B_{69}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B'_{02}	B'_{03}	B_{98}	B'_{01}	C_{42}	C_{46}	C_{22}	C_{15}	C_{75}	C_{69}
B_{70}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B'_{03}	B'_{02}	B_{97}	B_{99}	C_{44}	C_{48}	C_{24}	C_{17}	C_{75}	C_{69}
B_{71}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B_{99}	B_{97}	B'_{01}	B_{98}	C_{69}	C_{70}	C_{82}	C_{76}	C_{11}	C_{42}
B_{72}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	B'_{01}	B_{98}	B_{99}	B_{97}	C_{69}	C_{70}	C_{82}	C_{76}	C_{13}	C_{44}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B_{49}	C_{03}	C_{45}	C_{21}	C_{14}	B_{80}	B_{79}	B_{18}	B_{14}	B_{14}	B_{79}	B_{18}	B_{80}	B_{81}	B_{82}	C_{42}	C_{11}
B_{50}	C_{18}	C_{46}	C_{22}	C_{15}	B_{18}	B_{14}	B_{80}	B_{79}	B_{79}	B_{14}	B_{80}	B_{18}	B_{82}	B_{81}	C_{41}	C_{02}
B_{51}	C_{03}	C_{45}	C_{21}	C_{14}	B_{84}	B_{83}	B_{13}	B_{16}	B_{16}	B_{83}	B_{13}	B_{84}	B_{85}	B_{86}	C_{43}	C_{12}
B_{52}	C_{19}	C_{47}	C_{23}	C_{16}	B_{13}	B_{16}	B_{84}	B_{83}	B_{83}	B_{16}	B_{84}	B_{13}	B_{86}	B_{85}	C_{41}	C_{02}
B_{53}	C_{03}	C_{45}	C_{21}	C_{14}	B_{86}	B_{85}	B_{16}	B_{13}	B_{13}	B_{85}	B_{16}	B_{86}	B_{83}	B_{84}	C_{70}	C_{76}
B_{54}	C_{82}	C_{69}	C_{81}	C_{75}	B_{16}	B_{13}	B_{86}	B_{85}	B_{85}	B_{13}	B_{86}	B_{16}	B_{84}	B_{83}	C_{41}	C_{02}
B_{55}	C_{03}	C_{45}	C_{21}	C_{14}	B_{82}	B_{81}	B_{14}	B_{18}	B_{18}	B_{81}	B_{14}	B_{82}	B_{79}	B_{80}	C_{68}	C_{74}
B_{56}	C_{80}	C_{67}	C_{79}	C_{73}	B_{14}	B_{18}	B_{82}	B_{81}	B_{81}	B_{18}	B_{82}	B_{14}	B_{80}	B_{79}	C_{41}	C_{02}
B_{57}	C_{19}	C_{47}	C_{23}	C_{16}	B_{91}	B_{92}	B_{88}	B_{90}	B_{90}	B_{92}	B_{88}	B_{91}	B_{87}	B_{89}	C_{72}	C_{78}
B_{58}	C_{18}	C_{46}	C_{22}	C_{15}	B_{92}	B_{91}	B_{87}	B_{89}	B_{89}	B_{91}	B_{87}	B_{92}	B_{88}	B_{90}	C_{72}	C_{78}
B_{59}	C_{84}	C_{71}	C_{83}	C_{77}	B_{88}	B_{90}	B_{91}	B_{92}	B_{92}	B_{90}	B_{91}	B_{88}	B_{89}	B_{87}	C_{43}	C_{12}
B_{60}	C_{84}	C_{71}	C_{83}	C_{77}	B_{87}	B_{89}	B_{92}	B_{91}	B_{91}	B_{89}	B_{92}	B_{87}	B_{90}	B_{88}	C_{42}	C_{11}
B_{61}	C_{18}	C_{46}	C_{22}	C_{15}	B_{90}	B_{88}	B_{89}	B_{87}	B_{87}	B_{88}	B_{89}	B_{90}	B_{91}	B_{92}	C_{43}	C_{12}
B_{62}	C_{19}	C_{47}	C_{23}	C_{16}	B_{89}	B_{87}	B_{90}	B_{88}	B_{88}	B_{87}	B_{90}	B_{89}	B_{92}	B_{91}	C_{42}	C_{11}
B_{63}	C_{03}	C_{45}	C_{21}	C_{14}	B_{96}	B_{95}	B_{15}	B_{17}	B_{17}	B_{95}	B_{15}	B_{96}	B_{93}	B_{94}	C_{71}	C_{77}
B_{64}	C_{33}	C_{72}	C_{84}	C_{78}	B_{15}	B_{17}	B_{96}	B_{95}	B_{95}	B_{17}	B_{96}	B_{15}	B_{94}	B_{93}	C_{41}	C_{02}
B_{65}	C_{03}	C_{45}	C_{21}	C_{14}	B_{94}	B_{93}	B_{17}	B_{15}	B_{15}	B_{93}	B_{17}	B_{94}	B_{95}	B_{96}	C_{44}	C_{13}
B_{66}	C_{20}	C_{48}	C_{24}	C_{17}	B_{17}	B_{15}	B_{94}	B_{93}	B_{93}	B_{15}	B_{94}	B_{17}	B_{96}	B_{95}	C_{41}	C_{02}
B_{67}	C_{20}	C_{48}	C_{24}	C_{17}	B'_{02}	B'_{03}	B_{93}	B'_{01}	B'_{01}	B'_{03}	B_{98}	B'_{02}	B_{97}	B_{99}	C_{69}	C_{75}
B_{68}	C_{18}	C_{46}	C_{22}	C_{15}	B'_{03}	B'_{02}	B_{97}	B_{99}	B_{99}	B'_{02}	B_{97}	B'_{03}	B_{98}	B'_{01}	C_{69}	C_{75}
B_{69}	C_{81}	C_{70}	C_{82}	C_{76}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B'_{03}	B'_{01}	B'_{02}	B_{98}	B_{99}	B_{97}	C_{44}	C_{13}
B_{70}	C_{81}	C_{70}	C_{82}	C_{76}	B_{97}	B_{99}	B'_{03}	B'_{02}	B'_{02}	B_{99}	B'_{03}	B_{97}	B'_{01}	B_{98}	C_{42}	C_{11}
B_{71}	C_{18}	C_{46}	C_{22}	C_{15}	B'_{01}	B_{98}	B_{99}	B_{97}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	C_{44}	C_{13}
B_{72}	C_{20}	C_{48}	C_{24}	C_{17}	B_{99}	B_{97}	B'_{01}	B_{98}	B_{98}	B_{97}	B'_{01}	B_{99}	B'_{03}	B'_{02}	C_{42}	C_{11}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B_{49}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}
B_{50}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}
B_{51}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}
B_{52}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}
B_{53}	C_{69}	C_{82}	C_{75}	C_{81}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{54}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{55}	C_{67}	C_{80}	C_{73}	C_{79}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{56}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{57}	C_{71}	C_{84}	C_{77}	C_{83}	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{58}	C_{71}	C_{84}	C_{77}	C_{83}	B'_{23}	B'_{22}	B'_{25}	B'_{24}	B'_{27}	B'_{26}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{59}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{24}	B'_{26}	B'_{22}	B'_{27}	B'_{23}	B'_{25}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{60}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{25}	B'_{27}	B'_{23}	B'_{26}	B'_{22}	B'_{24}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{61}	C_{47}	C_{19}	C_{16}	C_{23}	B'_{26}	B'_{24}	B'_{27}	B'_{22}	B'_{25}	B'_{23}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}
B_{62}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{27}	B'_{25}	B'_{26}	B'_{23}	B'_{24}	B'_{22}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}
B_{63}	C_{72}	C_{33}	C_{78}	C_{84}	B'_{29}	B'_{28}	B'_{31}	B'_{30}	B'_{33}	B'_{32}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{64}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{65}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{32}	B'_{30}	B'_{33}	B'_{28}	B'_{31}	B'_{29}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}
B_{66}	C_{45}	C_{03}	C_{14}	C_{21}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}
B_{67}	C_{70}	C_{81}	C_{76}	C_{82}	B'_{34}	B'_{35}	B'_{36}	B'_{37}	B'_{38}	B'_{39}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{68}	C_{70}	C_{81}	C_{76}	C_{82}	B'_{35}	B'_{34}	B'_{37}	B'_{36}	B'_{39}	B'_{38}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{69}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{36}	B'_{38}	B'_{34}	B'_{39}	B'_{35}	B'_{37}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
B_{70}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{37}	B'_{39}	B'_{35}	B'_{38}	B'_{34}	B'_{36}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{71}	C_{48}	C_{20}	C_{17}	C_{24}	B'_{38}	B'_{36}	B'_{39}	B'_{34}	B'_{37}	B'_{35}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}
B_{72}	C_{46}	C_{18}	C_{15}	C_{22}	B'_{39}	B'_{37}	B'_{38}	B'_{35}	B'_{36}	B'_{34}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B_{49}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	B'_{10}	B'_{11}	B'_{12}	B'_{13}
B_{50}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	B'_{11}	B'_{10}	B'_{13}	B'_{12}
B_{51}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	B'_{16}	B'_{17}	B'_{18}	B'_{19}
B_{52}	C_{57}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	B'_{17}	B'_{16}	B'_{19}	B'_{18}
B_{53}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	B'_{18}	B'_{20}	B'_{16}	B'_{21}
B_{54}	C_{56}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	B'_{20}	B'_{18}	B'_{21}	B'_{16}
B_{55}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	B'_{12}	B'_{14}	B'_{10}	B'_{15}
B_{56}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	B'_{14}	B'_{12}	B'_{15}	B'_{10}
B_{57}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{24}	B'_{26}	B'_{22}	B'_{27}	B'_{23}	B'_{25}	B'_{25}	B'_{27}	B'_{23}	B'_{26}
B_{58}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{25}	B'_{27}	B'_{23}	B'_{26}	B'_{22}	B'_{24}	B'_{24}	B'_{26}	B'_{22}	B'_{27}
B_{59}	C_{56}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{27}	B'_{25}	B'_{26}	B'_{23}
B_{60}	C_{56}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	B'_{23}	B'_{22}	B'_{25}	B'_{24}	B'_{27}	B'_{26}	B'_{26}	B'_{24}	B'_{27}	B'_{22}
B_{61}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{27}	B'_{25}	B'_{26}	B'_{23}	B'_{24}	B'_{22}	B'_{22}	B'_{23}	B'_{24}	B'_{25}
B_{62}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B'_{26}	B'_{24}	B'_{27}	B'_{22}	B'_{25}	B'_{23}	B'_{23}	B'_{22}	B'_{25}	B'_{24}
B_{63}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{31}	B'_{33}	B'_{29}	B'_{32}	B'_{28}	B'_{30}	B'_{30}	B'_{32}	B'_{28}	B'_{33}
B_{64}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	B'_{29}	B'_{28}	B'_{31}	B'_{30}	B'_{33}	B'_{32}	B'_{32}	B'_{30}	B'_{33}	B'_{28}
B_{65}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	B'_{33}	B'_{31}	B'_{32}	B'_{29}	B'_{30}	B'_{28}	B'_{28}	B'_{29}	B'_{30}	B'_{31}
B_{66}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{32}	B'_{30}	B'_{33}	B'_{28}	B'_{31}	B'_{29}	B'_{29}	B'_{28}	B'_{31}	B'_{30}
B_{67}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{36}	B'_{38}	B'_{34}	B'_{39}	B'_{35}	B'_{37}	B'_{37}	B'_{39}	B'_{35}	B'_{38}
B_{68}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{37}	B'_{39}	B'_{35}	B'_{38}	B'_{34}	B'_{36}	B'_{36}	B'_{38}	B'_{34}	B'_{39}
B_{69}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	B'_{34}	B'_{35}	B'_{36}	B'_{37}	B'_{38}	B'_{39}	B'_{39}	B'_{37}	B'_{38}	B'_{35}
B_{70}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	B'_{35}	B'_{34}	B'_{37}	B'_{36}	B'_{39}	B'_{38}	B'_{38}	B'_{36}	B'_{39}	B'_{34}
B_{71}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	B'_{39}	B'_{37}	B'_{38}	B'_{35}	B'_{36}	B'_{34}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B_{72}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B'_{38}	B'_{36}	B'_{39}	B'_{34}	B'_{37}	B'_{35}	B'_{35}	B'_{34}	B'_{37}	B'_{36}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{49}	B'_{14}	B'_{15}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{62}	C_{74}	C_{80}	C_{01}	D_{01}	C_{04}	C_{61}	C_{07}
B_{50}	B'_{15}	B'_{14}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{62}	C_{74}	C_{80}	C_{04}	D_{01}	C_{01}	C_{61}	C_{08}
B_{51}	B'_{20}	B'_{22}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{64}	C_{76}	C_{82}	C_{01}	D_{01}	C_{05}	C_{63}	C_{07}
B_{52}	B'_{21}	B'_{20}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{64}	C_{76}	C_{82}	C_{05}	D_{01}	C_{01}	C_{63}	C_{09}
B_{53}	B'_{17}	B'_{19}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{05}	C_{12}	C_{19}	C_{01}	D_{01}	C_{64}	C_{09}	C_{07}
B_{54}	B'_{19}	B'_{17}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{05}	C_{12}	C_{19}	C_{64}	D_{01}	C_{01}	C_{09}	C_{63}
B_{55}	B'_{11}	B'_{13}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{04}	C_{11}	C_{18}	C_{01}	D_{01}	C_{62}	C_{08}	C_{07}
B_{56}	B'_{13}	B'_{11}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{04}	C_{11}	C_{18}	C_{62}	D_{01}	C_{01}	C_{08}	C_{61}
B_{57}	B'_{22}	B'_{24}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{04}	C_{11}	C_{18}	C_{05}	D_{01}	C_{66}	C_{08}	C_{09}
B_{58}	B'_{23}	B'_{25}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{05}	C_{12}	C_{19}	C_{04}	D_{01}	C_{66}	C_{09}	C_{08}
B_{59}	B'_{24}	B'_{22}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{04}	C_{11}	C_{18}	C_{66}	D_{01}	C_{05}	C_{08}	C_{65}
B_{60}	B'_{25}	B'_{23}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{05}	C_{12}	C_{19}	C_{66}	D_{01}	C_{04}	C_{09}	C_{65}
B_{61}	B'_{26}	B'_{27}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{66}	C_{78}	C_{84}	C_{04}	D_{01}	C_{05}	C_{65}	C_{08}
B_{62}	B'_{27}	B'_{26}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{66}	C_{78}	C_{84}	C_{05}	D_{01}	C_{04}	C_{65}	C_{09}
B_{63}	B'_{28}	B'_{31}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{06}	C_{13}	C_{20}	C_{01}	D_{01}	C_{65}	C_{10}	C_{07}
B_{64}	B'_{31}	B'_{29}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{06}	C_{13}	C_{20}	C_{65}	D_{01}	C_{01}	C_{10}	C_{66}
B_{65}	B'_{32}	B'_{33}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{65}	C_{77}	C_{83}	C_{01}	D_{01}	C_{06}	C_{66}	C_{07}
B_{66}	B'_{33}	B'_{32}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{65}	C_{77}	C_{83}	C_{06}	D_{01}	C_{01}	C_{66}	C_{10}
B_{67}	B'_{34}	B'_{36}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{04}	C_{11}	C_{18}	C_{06}	D_{01}	C_{63}	C_{08}	C_{10}
B_{68}	B'_{35}	B'_{37}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{06}	C_{13}	C_{20}	C_{04}	D_{01}	C_{63}	C_{10}	C_{08}
B_{69}	B'_{36}	B'_{34}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{04}	C_{11}	C_{18}	C_{63}	D_{01}	C_{06}	C_{08}	C_{64}
B_{70}	B'_{37}	B'_{35}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{06}	C_{13}	C_{20}	C_{63}	D_{01}	C_{04}	C_{10}	C_{64}
B_{71}	B'_{38}	B'_{39}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{63}	C_{75}	C_{81}	C_{04}	D_{01}	C_{06}	C_{64}	C_{08}
B_{72}	B'_{39}	B'_{38}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{63}	C_{75}	C_{81}	C_{06}	D_{01}	C_{04}	C_{64}	C_{10}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
B_{49}	D_{04}	C_{08}	C_{02}	D_{02}	C_{11}	C_{73}	C_{14}	D_{04}	C_{15}	C_{03}	D_{03}	C_{18}	C_{79}	C_{21}	D_{04}	C_{22}
B_{50}	D_{04}	C_{07}	C_{11}	D_{02}	C_{02}	C_{73}	C_{15}	D_{04}	C_{14}	C_{18}	D_{03}	C_{03}	C_{79}	C_{22}	D_{04}	C_{21}
B_{51}	D_{04}	C_{09}	C_{02}	D_{02}	C_{12}	C_{75}	C_{14}	D_{04}	C_{16}	C_{03}	D_{03}	C_{19}	C_{81}	C_{21}	D_{04}	C_{23}
B_{52}	D_{04}	C_{07}	C_{12}	D_{02}	C_{02}	C_{75}	C_{16}	D_{04}	C_{14}	C_{19}	D_{03}	C_{03}	C_{81}	C_{23}	D_{04}	C_{21}
B_{53}	D_{04}	C_{63}	C_{02}	D_{02}	C_{76}	C_{16}	C_{14}	D_{04}	C_{75}	C_{03}	D_{03}	C_{82}	C_{23}	C_{21}	D_{04}	C_{81}
B_{54}	D_{04}	C_{07}	C_{76}	D_{02}	C_{02}	C_{16}	C_{75}	D_{04}	C_{14}	C_{82}	D_{03}	C_{03}	C_{23}	C_{81}	D_{04}	C_{21}
B_{55}	D_{04}	C_{61}	C_{02}	D_{02}	C_{74}	C_{15}	C_{14}	D_{04}	C_{73}	C_{03}	D_{03}	C_{80}	C_{22}	C_{21}	D_{04}	C_{79}
B_{56}	D_{04}	C_{07}	C_{74}	D_{02}	C_{02}	C_{15}	C_{73}	D_{04}	C_{14}	C_{80}	D_{03}	C_{03}	C_{22}	C_{79}	D_{04}	C_{21}
B_{57}	D_{04}	C_{65}	C_{12}	D_{02}	C_{78}	C_{15}	C_{16}	D_{04}	C_{77}	C_{19}	D_{03}	C_{84}	C_{22}	C_{23}	D_{04}	C_{83}
B_{58}	D_{04}	C_{65}	C_{11}	D_{02}	C_{78}	C_{16}	C_{15}	D_{04}	C_{77}	C_{18}	D_{03}	C_{84}	C_{23}	C_{22}	D_{04}	C_{83}
B_{59}	D_{04}	C_{09}	C_{78}	D_{02}	C_{12}	C_{15}	C_{77}	D_{04}	C_{16}	C_{84}	D_{03}	C_{19}	C_{22}	C_{83}	D_{04}	C_{23}
B_{60}	D_{04}	C_{08}	C_{78}	D_{02}	C_{11}	C_{16}	C_{77}	D_{04}	C_{15}	C_{84}	D_{03}	C_{18}	C_{23}	C_{83}	D_{04}	C_{22}
B_{61}	D_{04}	C_{09}	C_{11}	D_{02}	C_{12}	C_{77}	C_{15}	D_{04}	C_{16}	C_{18}	D_{03}	C_{19}	C_{83}	C_{22}	D_{04}	C_{23}
B_{62}	D_{04}	C_{08}	C_{12}	D_{02}	C_{11}	C_{77}	C_{16}	D_{04}	C_{15}	C_{19}	D_{03}	C_{18}	C_{83}	C_{23}	D_{04}	C_{22}
B_{63}	D_{04}	C_{66}	C_{02}	D_{02}	C_{77}	C_{17}	C_{14}	D_{04}	C_{78}	C_{03}	D_{03}	C_{83}	C_{24}	C_{21}	D_{04}	C_{84}
B_{64}	D_{04}	C_{07}	C_{77}	D_{02}	C_{02}	C_{17}	C_{78}	D_{04}	C_{14}	C_{83}	D_{03}	C_{03}	C_{24}	C_{84}	D_{04}	C_{21}
B_{65}	D_{04}	C_{10}	C_{02}	D_{02}	C_{13}	C_{78}	C_{14}	D_{04}	C_{17}	C_{03}	D_{03}	C_{20}	C_{84}	C_{21}	D_{04}	C_{24}
B_{66}	D_{04}	C_{07}	C_{13}	D_{02}	C_{02}	C_{78}	C_{17}	D_{04}	C_{14}	C_{20}	D_{03}	C_{03}	C_{84}	C_{24}	D_{04}	C_{21}
B_{67}	D_{04}	C_{64}	C_{13}	D_{02}	C_{75}	C_{15}	C_{17}	D_{04}	C_{76}	C_{20}	D_{03}	C_{81}	C_{22}	C_{24}	D_{04}	C_{82}
B_{68}	D_{04}	C_{64}	C_{11}	D_{02}	C_{75}	C_{17}	C_{15}	D_{04}	C_{76}	C_{18}	D_{03}	C_{81}	C_{24}	C_{22}	D_{04}	C_{82}
B_{69}	D_{04}	C_{10}	C_{75}	D_{02}	C_{13}	C_{15}	C_{76}	D_{04}	C_{17}	C_{81}	D_{03}	C_{20}	C_{22}	C_{82}	D_{04}	C_{24}
B_{70}	D_{04}	C_{08}	C_{75}	D_{02}	C_{11}	C_{17}	C_{76}	D_{04}	C_{15}	C_{81}	D_{03}	C_{18}	C_{24}	C_{82}	D_{04}	C_{22}
B_{71}	D_{04}	C_{10}	C_{11}	D_{02}	C_{13}	C_{76}	C_{15}	D_{04}	C_{17}	C_{18}	D_{03}	C_{20}	C_{82}	C_{22}	D_{04}	C_{24}
B_{72}	D_{04}	C_{08}	C_{13}	D_{02}	C_{11}	C_{76}	C_{17}	D_{04}	C_{15}	C_{20}	D_{03}	C_{18}	C_{82}	C_{24}	D_{04}	C_{22}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B_{49}	C_{50}	C_{25}	D_{01}	C_{26}	C_{49}	C_{29}	D_{02}	C_{30}	C_{56}	C_{33}	D_{01}	C_{34}	C_{25}	C_{37}	D_{03}	C_{38}
B_{50}	C_{50}	C_{26}	D_{01}	C_{25}	C_{49}	C_{30}	D_{02}	C_{29}	C_{56}	C_{34}	D_{01}	C_{33}	C_{26}	C_{38}	D_{03}	C_{37}
B_{51}	C_{52}	C_{25}	D_{01}	C_{27}	C_{51}	C_{29}	D_{02}	C_{31}	C_{58}	C_{33}	D_{01}	C_{35}	C_{25}	C_{37}	D_{03}	C_{39}
B_{52}	C_{52}	C_{27}	D_{01}	C_{25}	C_{51}	C_{31}	D_{02}	C_{29}	C_{58}	C_{57}	D_{01}	C_{33}	C_{27}	C_{39}	D_{03}	C_{37}
B_{53}	C_{27}	C_{25}	D_{01}	C_{52}	C_{31}	C_{29}	D_{02}	C_{51}	C_{35}	C_{33}	D_{01}	C_{58}	C_{25}	C_{37}	D_{03}	C_{57}
B_{54}	C_{27}	C_{52}	D_{01}	C_{25}	C_{31}	C_{51}	D_{02}	C_{29}	C_{35}	C_{58}	D_{01}	C_{33}	C_{52}	C_{57}	D_{03}	C_{37}
B_{55}	C_{26}	C_{25}	D_{01}	C_{50}	C_{30}	C_{29}	D_{02}	C_{49}	C_{34}	C_{33}	D_{01}	C_{56}	C_{25}	C_{37}	D_{03}	C_{55}
B_{56}	C_{26}	C_{50}	D_{01}	C_{25}	C_{30}	C_{49}	D_{02}	C_{29}	C_{34}	C_{56}	D_{01}	C_{33}	C_{50}	C_{55}	D_{03}	C_{37}
B_{57}	C_{26}	C_{27}	D_{01}	C_{54}	C_{30}	C_{31}	D_{02}	C_{53}	C_{34}	C_{35}	D_{01}	C_{60}	C_{27}	C_{39}	D_{03}	C_{59}
B_{58}	C_{27}	C_{26}	D_{01}	C_{54}	C_{31}	C_{30}	D_{02}	C_{53}	C_{35}	C_{34}	D_{01}	C_{60}	C_{26}	C_{38}	D_{03}	C_{59}
B_{59}	C_{26}	C_{54}	D_{01}	C_{27}	C_{30}	C_{53}	D_{02}	C_{31}	C_{34}	C_{60}	D_{01}	C_{35}	C_{54}	C_{59}	D_{03}	C_{39}
B_{60}	C_{27}	C_{54}	D_{01}	C_{26}	C_{31}	C_{53}	D_{02}	C_{30}	C_{35}	C_{60}	D_{01}	C_{34}	C_{54}	C_{59}	D_{03}	C_{38}
B_{61}	C_{54}	C_{26}	D_{01}	C_{27}	C_{53}	C_{30}	D_{02}	C_{31}	C_{60}	C_{34}	D_{01}	C_{35}	C_{26}	C_{38}	D_{03}	C_{39}
B_{62}	C_{54}	C_{27}	D_{01}	C_{26}	C_{53}	C_{31}	D_{02}	C_{30}	C_{60}	C_{35}	D_{01}	C_{34}	C_{27}	C_{39}	D_{03}	C_{38}
B_{63}	C_{28}	C_{25}	D_{01}	C_{53}	C_{32}	C_{29}	D_{02}	C_{54}	C_{36}	C_{33}	D_{01}	C_{59}	C_{25}	C_{37}	D_{03}	C_{60}
B_{64}	C_{28}	C_{53}	D_{01}	C_{25}	C_{32}	C_{54}	D_{02}	C_{29}	C_{36}	C_{59}	D_{01}	C_{33}	C_{53}	C_{60}	D_{03}	C_{37}
B_{65}	C_{53}	C_{25}	D_{01}	C_{28}	C_{54}	C_{29}	D_{02}	C_{32}	C_{59}	C_{33}	D_{01}	C_{36}	C_{25}	C_{37}	D_{03}	C_{40}
B_{66}	C_{53}	C_{28}	D_{01}	C_{25}	C_{54}	C_{32}	D_{02}	C_{29}	C_{59}	C_{36}	D_{01}	C_{33}	C_{28}	C_{40}	D_{03}	C_{37}
B_{67}	C_{26}	C_{28}	D_{01}	C_{51}	C_{30}	C_{32}	D_{02}	C_{52}	C_{34}	C_{36}	D_{01}	C_{57}	C_{28}	C_{40}	D_{03}	C_{58}
B_{68}	C_{28}	C_{26}	D_{01}	C_{51}	C_{32}	C_{30}	D_{02}	C_{52}	C_{36}	C_{34}	D_{01}	C_{57}	C_{26}	C_{38}	D_{03}	C_{58}
B_{69}	C_{26}	C_{51}	D_{01}	C_{28}	C_{30}	C_{52}	D_{02}	C_{32}	C_{34}	C_{57}	D_{01}	C_{36}	C_{51}	C_{58}	D_{03}	C_{40}
B_{70}	C_{28}	C_{51}	D_{01}	C_{26}	C_{32}	C_{52}	D_{02}	C_{30}	C_{36}	C_{57}	D_{01}	C_{34}	C_{51}	C_{58}	D_{03}	C_{38}
B_{71}	C_{51}	C_{26}	D_{01}	C_{28}	C_{52}	C_{30}	D_{02}	C_{32}	C_{57}	C_{34}	D_{01}	C_{36}	C_{26}	C_{38}	D_{03}	C_{40}
B_{72}	C_{51}	C_{28}	D_{01}	C_{26}	C_{52}	C_{32}	D_{02}	C_{30}	C_{57}	C_{36}	D_{01}	C_{34}	C_{28}	C_{40}	D_{03}	C_{38}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{41}	c_{42}	c_{43}	c_{44}	c_{45}	c_{46}	c_{47}	c_{48}	c_{49}	c_{50}	c_{51}	c_{52}	c_{53}	c_{54}	c_{55}	c_{56}
B_{49}	c_{68}	c_{41}	D_{02}	c_{42}	c_{67}	c_{45}	D_{03}	c_{46}	c_{30}	c_{26}	c_{50}	c_{49}	c_{25}	c_{29}	c_{38}	c_{34}
B_{50}	c_{68}	c_{42}	D_{02}	c_{41}	c_{67}	c_{46}	D_{03}	c_{45}	c_{29}	c_{25}	c_{50}	c_{49}	c_{26}	c_{30}	c_{37}	c_{33}
B_{51}	c_{70}	c_{41}	D_{02}	c_{43}	c_{69}	c_{45}	D_{03}	c_{47}	c_{31}	c_{27}	c_{52}	c_{51}	c_{25}	c_{29}	c_{39}	c_{35}
B_{52}	c_{70}	c_{43}	D_{02}	c_{41}	c_{69}	c_{47}	D_{03}	c_{45}	c_{29}	c_{25}	c_{52}	c_{51}	c_{27}	c_{31}	c_{37}	c_{33}
B_{53}	c_{43}	c_{41}	D_{02}	c_{70}	c_{47}	c_{45}	D_{03}	c_{69}	c_{51}	c_{52}	c_{27}	c_{31}	c_{25}	c_{29}	c_{57}	c_{58}
B_{54}	c_{43}	c_{70}	D_{02}	c_{41}	c_{47}	c_{69}	D_{03}	c_{45}	c_{29}	c_{25}	c_{27}	c_{31}	c_{52}	c_{51}	c_{37}	c_{33}
B_{55}	c_{42}	c_{41}	D_{02}	c_{68}	c_{46}	c_{45}	D_{03}	c_{67}	c_{49}	c_{50}	c_{26}	c_{30}	c_{25}	c_{29}	c_{55}	c_{56}
B_{56}	c_{42}	c_{68}	D_{02}	c_{41}	c_{46}	c_{67}	D_{03}	c_{45}	c_{29}	c_{25}	c_{26}	c_{30}	c_{50}	c_{49}	c_{37}	c_{33}
B_{57}	c_{42}	c_{43}	D_{02}	c_{72}	c_{46}	c_{47}	D_{03}	c_{71}	c_{53}	c_{54}	c_{26}	c_{30}	c_{27}	c_{31}	c_{59}	c_{60}
B_{58}	c_{43}	c_{42}	D_{02}	c_{72}	c_{47}	c_{46}	D_{03}	c_{71}	c_{53}	c_{54}	c_{27}	c_{31}	c_{26}	c_{30}	c_{59}	c_{60}
B_{59}	c_{42}	c_{72}	D_{02}	c_{43}	c_{46}	c_{71}	D_{03}	c_{47}	c_{31}	c_{27}	c_{26}	c_{30}	c_{54}	c_{53}	c_{39}	c_{35}
B_{60}	c_{43}	c_{72}	D_{02}	c_{42}	c_{47}	c_{71}	D_{03}	c_{46}	c_{30}	c_{26}	c_{27}	c_{31}	c_{54}	c_{53}	c_{38}	c_{34}
B_{61}	c_{72}	c_{42}	D_{02}	c_{43}	c_{71}	c_{46}	D_{03}	c_{47}	c_{31}	c_{27}	c_{54}	c_{53}	c_{26}	c_{30}	c_{39}	c_{35}
B_{62}	c_{72}	c_{43}	D_{02}	c_{42}	c_{71}	c_{47}	D_{03}	c_{46}	c_{30}	c_{26}	c_{54}	c_{53}	c_{27}	c_{31}	c_{38}	c_{34}
B_{63}	c_{44}	c_{41}	D_{02}	c_{71}	c_{48}	c_{45}	D_{03}	c_{42}	c_{54}	c_{53}	c_{28}	c_{32}	c_{25}	c_{29}	c_{60}	c_{59}
B_{64}	c_{44}	c_{71}	D_{02}	c_{41}	c_{48}	c_{72}	D_{03}	c_{45}	c_{29}	c_{25}	c_{28}	c_{32}	c_{53}	c_{54}	c_{37}	c_{33}
B_{65}	c_{71}	c_{41}	D_{02}	c_{44}	c_{72}	c_{45}	D_{03}	c_{48}	c_{32}	c_{28}	c_{53}	c_{54}	c_{25}	c_{29}	c_{40}	c_{36}
B_{66}	c_{71}	c_{44}	D_{02}	c_{41}	c_{72}	c_{48}	D_{03}	c_{45}	c_{29}	c_{25}	c_{53}	c_{54}	c_{28}	c_{32}	c_{37}	c_{33}
B_{67}	c_{42}	c_{44}	D_{02}	c_{69}	c_{46}	c_{48}	D_{03}	c_{70}	c_{52}	c_{51}	c_{26}	c_{30}	c_{28}	c_{32}	c_{58}	c_{57}
B_{68}	c_{44}	c_{42}	D_{02}	c_{69}	c_{48}	c_{46}	D_{03}	c_{70}	c_{52}	c_{51}	c_{28}	c_{32}	c_{26}	c_{30}	c_{58}	c_{57}
B_{69}	c_{42}	c_{69}	D_{02}	c_{44}	c_{46}	c_{70}	D_{03}	c_{48}	c_{32}	c_{28}	c_{26}	c_{30}	c_{51}	c_{52}	c_{40}	c_{36}
B_{70}	c_{44}	c_{69}	D_{02}	c_{42}	c_{48}	c_{70}	D_{03}	c_{46}	c_{30}	c_{26}	c_{28}	c_{32}	c_{51}	c_{52}	c_{38}	c_{34}
B_{71}	c_{69}	c_{42}	D_{02}	c_{44}	c_{70}	c_{46}	D_{03}	c_{48}	c_{32}	c_{28}	c_{51}	c_{52}	c_{26}	c_{30}	c_{40}	c_{36}
B_{72}	c_{69}	c_{44}	D_{02}	c_{42}	c_{70}	c_{48}	D_{03}	c_{46}	c_{30}	c_{26}	c_{51}	c_{52}	c_{28}	c_{32}	c_{38}	c_{34}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
B_{49}	c_{56}	c_{55}	c_{33}	c_{37}	c_{08}	c_{04}	c_{62}	c_{61}	c_{01}	c_{07}	c_{46}	c_{42}	c_{68}	c_{67}	c_{41}	c_{45}
B_{50}	c_{56}	c_{55}	c_{34}	c_{38}	c_{07}	c_{01}	c_{62}	c_{61}	c_{04}	c_{08}	c_{45}	c_{41}	c_{68}	c_{67}	c_{42}	c_{46}
B_{51}	c_{58}	c_{57}	c_{33}	c_{37}	c_{09}	c_{05}	c_{64}	c_{63}	c_{01}	c_{07}	c_{47}	c_{43}	c_{70}	c_{69}	c_{41}	c_{45}
B_{52}	c_{58}	c_{57}	c_{57}	c_{39}	c_{07}	c_{01}	c_{64}	c_{63}	c_{05}	c_{09}	c_{45}	c_{41}	c_{70}	c_{69}	c_{43}	c_{47}
B_{53}	c_{35}	c_{39}	c_{33}	c_{37}	c_{63}	c_{64}	c_{05}	c_{09}	c_{01}	c_{07}	c_{69}	c_{70}	c_{43}	c_{47}	c_{41}	c_{45}
B_{54}	c_{35}	c_{39}	c_{58}	c_{57}	c_{07}	c_{01}	c_{05}	c_{09}	c_{64}	c_{63}	c_{45}	c_{41}	c_{43}	c_{47}	c_{70}	c_{69}
B_{55}	c_{34}	c_{38}	c_{33}	c_{37}	c_{61}	c_{62}	c_{04}	c_{08}	c_{01}	c_{07}	c_{67}	c_{68}	c_{42}	c_{46}	c_{41}	c_{45}
B_{56}	c_{34}	c_{38}	c_{56}	c_{55}	c_{07}	c_{01}	c_{04}	c_{08}	c_{62}	c_{61}	c_{45}	c_{41}	c_{42}	c_{46}	c_{68}	c_{67}
B_{57}	c_{34}	c_{38}	c_{35}	c_{39}	c_{65}	c_{66}	c_{04}	c_{08}	c_{05}	c_{09}	c_{71}	c_{72}	c_{42}	c_{46}	c_{43}	c_{47}
B_{58}	c_{35}	c_{39}	c_{34}	c_{38}	c_{65}	c_{66}	c_{05}	c_{09}	c_{04}	c_{08}	c_{71}	c_{72}	c_{43}	c_{47}	c_{42}	c_{46}
B_{59}	c_{34}	c_{38}	c_{60}	c_{59}	c_{09}	c_{05}	c_{04}	c_{08}	c_{66}	c_{65}	c_{47}	c_{43}	c_{42}	c_{46}	c_{72}	c_{71}
B_{60}	c_{35}	c_{39}	c_{60}	c_{59}	c_{08}	c_{04}	c_{05}	c_{09}	c_{66}	c_{65}	c_{46}	c_{42}	c_{43}	c_{47}	c_{72}	c_{71}
B_{61}	c_{60}	c_{59}	c_{34}	c_{38}	c_{09}	c_{05}	c_{66}	c_{65}	c_{04}	c_{08}	c_{47}	c_{43}	c_{72}	c_{71}	c_{42}	c_{46}
B_{62}	c_{60}	c_{59}	c_{35}	c_{39}	c_{08}	c_{04}	c_{66}	c_{65}	c_{05}	c_{09}	c_{46}	c_{42}	c_{72}	c_{71}	c_{43}	c_{47}
B_{63}	c_{36}	c_{40}	c_{33}	c_{37}	c_{66}	c_{65}	c_{06}	c_{10}	c_{01}	c_{07}	c_{72}	c_{71}	c_{44}	c_{48}	c_{41}	c_{45}
B_{64}	c_{36}	c_{40}	c_{59}	c_{60}	c_{07}	c_{01}	c_{06}	c_{10}	c_{65}	c_{66}	c_{45}	c_{41}	c_{44}	c_{48}	c_{71}	c_{72}
B_{65}	c_{59}	c_{60}	c_{33}	c_{37}	c_{10}	c_{06}	c_{65}	c_{66}	c_{01}	c_{07}	c_{48}	c_{44}	c_{71}	c_{72}	c_{41}	c_{45}
B_{66}	c_{59}	c_{60}	c_{36}	c_{40}	c_{07}	c_{01}	c_{65}	c_{66}	c_{06}	c_{10}	c_{45}	c_{41}	c_{71}	c_{72}	c_{44}	c_{48}
B_{67}	c_{34}	c_{38}	c_{36}	c_{40}	c_{64}	c_{63}	c_{04}	c_{08}	c_{06}	c_{10}	c_{70}	c_{69}	c_{42}	c_{46}	c_{44}	c_{48}
B_{68}	c_{36}	c_{40}	c_{34}	c_{38}	c_{64}	c_{63}	c_{06}	c_{10}	c_{04}	c_{08}	c_{70}	c_{69}	c_{44}	c_{48}	c_{42}	c_{46}
B_{69}	c_{34}	c_{38}	c_{57}	c_{58}	c_{10}	c_{06}	c_{04}	c_{08}	c_{63}	c_{64}	c_{48}	c_{44}	c_{42}	c_{46}	c_{69}	c_{70}
B_{70}	c_{36}	c_{40}	c_{57}	c_{58}	c_{08}	c_{04}	c_{06}	c_{10}	c_{63}	c_{64}	c_{46}	c_{42}	c_{44}	c_{48}	c_{69}	c_{70}
B_{71}	c_{57}	c_{58}	c_{34}	c_{38}	c_{10}	c_{06}	c_{63}	c_{64}	c_{04}	c_{08}	c_{48}	c_{44}	c_{69}	c_{70}	c_{42}	c_{46}
B_{72}	c_{57}	c_{58}	c_{36}	c_{40}	c_{08}	c_{04}	c_{63}	c_{64}	c_{06}	c_{10}	c_{46}	c_{42}	c_{69}	c_{70}	c_{44}	c_{48}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{49}	C_{15}	C_{11}	C_{74}	C_{73}	C_{02}	C_{14}	C_{22}	C_{18}	C_{80}	C_{79}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{50}	C_{14}	C_{02}	C_{74}	C_{73}	C_{11}	C_{15}	C_{21}	C_{03}	C_{80}	C_{79}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{51}	C_{16}	C_{12}	C_{76}	C_{75}	C_{02}	C_{14}	C_{23}	C_{19}	C_{82}	C_{81}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{52}	C_{14}	C_{02}	C_{76}	C_{75}	C_{12}	C_{16}	C_{21}	C_{03}	C_{82}	C_{81}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{53}	C_{75}	C_{76}	C_{12}	C_{16}	C_{02}	C_{14}	C_{81}	C_{82}	C_{19}	C_{23}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{54}	C_{14}	C_{02}	C_{12}	C_{16}	C_{76}	C_{75}	C_{21}	C_{03}	C_{19}	C_{23}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B_{55}	C_{73}	C_{74}	C_{11}	C_{15}	C_{02}	C_{14}	C_{79}	C_{80}	C_{18}	C_{22}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{56}	C_{14}	C_{02}	C_{11}	C_{15}	C_{74}	C_{73}	C_{21}	C_{03}	C_{18}	C_{22}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B_{57}	C_{77}	C_{78}	C_{11}	C_{15}	C_{12}	C_{16}	C_{83}	C_{84}	C_{18}	C_{22}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{58}	C_{77}	C_{78}	C_{12}	C_{16}	C_{11}	C_{15}	C_{83}	C_{84}	C_{19}	C_{23}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{59}	C_{16}	C_{12}	C_{11}	C_{15}	C_{78}	C_{77}	C_{23}	C_{19}	C_{18}	C_{22}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{60}	C_{15}	C_{11}	C_{12}	C_{16}	C_{78}	C_{77}	C_{22}	C_{18}	C_{19}	C_{23}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{61}	C_{16}	C_{12}	C_{78}	C_{77}	C_{11}	C_{15}	C_{23}	C_{19}	C_{84}	C_{83}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{62}	C_{15}	C_{11}	C_{78}	C_{77}	C_{12}	C_{16}	C_{22}	C_{18}	C_{84}	C_{83}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{63}	C_{78}	C_{77}	C_{13}	C_{17}	C_{02}	C_{14}	C_{84}	C_{83}	C_{20}	C_{24}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{64}	C_{14}	C_{02}	C_{13}	C_{17}	C_{77}	C_{78}	C_{21}	C_{03}	C_{20}	C_{24}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{65}	C_{17}	C_{13}	C_{77}	C_{78}	C_{02}	C_{14}	C_{24}	C_{20}	C_{83}	C_{84}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
B_{66}	C_{14}	C_{02}	C_{77}	C_{78}	C_{13}	C_{17}	C_{21}	C_{03}	C_{83}	C_{84}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{67}	C_{76}	C_{75}	C_{11}	C_{15}	C_{13}	C_{17}	C_{82}	C_{81}	C_{18}	C_{22}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{68}	C_{76}	C_{75}	C_{13}	C_{17}	C_{11}	C_{15}	C_{82}	C_{81}	C_{20}	C_{24}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{69}	C_{17}	C_{13}	C_{11}	C_{15}	C_{75}	C_{76}	C_{24}	C_{20}	C_{18}	C_{22}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{70}	C_{15}	C_{11}	C_{13}	C_{17}	C_{75}	C_{76}	C_{22}	C_{18}	C_{20}	C_{24}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{71}	C_{17}	C_{13}	C_{75}	C_{76}	C_{11}	C_{15}	C_{24}	C_{20}	C_{81}	C_{82}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
B_{72}	C_{15}	C_{11}	C_{75}	C_{76}	C_{13}	C_{17}	C_{22}	C_{18}	C_{81}	C_{82}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{73}	B_{73}	B_{43}	B'_{04}	B_{45}	B'_{06}	B_{75}	B_{74}	B'_{40}	B_{44}	B'_{41}	B'_{05}	B'_{42}	B_{46}	B'_{43}	B'_{07}	$B_{..}$
B_{74}	B_{74}	B_{44}	B'_{05}	B_{46}	B'_{07}	B_{76}	B_{73}	B'_{41}	B_{43}	B'_{40}	B'_{04}	B'_{43}	B_{45}	B'_{42}	B'_{06}	B'_{45}
B_{75}	B_{75}	B_{45}	B'_{06}	B_{43}	B'_{04}	B_{73}	B_{77}	B'_{42}	B_{47}	B'_{44}	B'_{08}	B'_{40}	B_{48}	B'_{45}	B'_{09}	B'_{41}
B_{76}	B_{76}	B_{46}	B'_{07}	B_{44}	B'_{05}	B_{74}	B_{78}	B'_{43}	B_{48}	B'_{45}	B'_{09}	B'_{41}	B_{47}	B'_{44}	B'_{08}	B'_{40}
B_{77}	B_{77}	B_{47}	B'_{08}	B_{48}	B'_{09}	B_{78}	B_{75}	B'_{44}	B_{45}	B'_{42}	B'_{06}	B'_{45}	B_{43}	B'_{40}	B'_{04}	B'_{43}
B_{78}	B_{78}	B_{48}	B'_{09}	B_{47}	B'_{08}	B_{77}	B_{76}	B'_{45}	B_{46}	B'_{43}	B'_{07}	B'_{44}	B_{44}	B'_{41}	B'_{05}	B'_{42}
B_{79}	B_{79}	B_{80}	B_{55}	B_{56}	B_{19}	B_{20}	B_{14}	B_{82}	B_{18}	B_{81}	B_{08}	B_{50}	B_{12}	B_{49}	B_{03}	B_{22}
B_{80}	B_{80}	B_{79}	B_{56}	B_{55}	B_{20}	B_{19}	B_{82}	B_{14}	B_{81}	B_{18}	B_{50}	B_{08}	B_{49}	B_{12}	B_{22}	B_{03}
B_{81}	B_{81}	B_{82}	B_{49}	B_{50}	B_{21}	B_{22}	B_{18}	B_{80}	B_{14}	B_{79}	B_{12}	B_{56}	B_{08}	B_{55}	B_{04}	B_{20}
B_{82}	B_{82}	B_{81}	B_{50}	B_{49}	B_{22}	B_{21}	B_{80}	B_{18}	B_{79}	B_{14}	B_{56}	B_{12}	B_{55}	B_{08}	B_{20}	B_{04}
B_{83}	B_{83}	B_{84}	B_{53}	B_{54}	B_{23}	B_{24}	B_{16}	B_{86}	B_{13}	B_{85}	B_{09}	B_{52}	B_{10}	B_{51}	B_{02}	B_{26}
B_{84}	B_{84}	B_{83}	B_{54}	B_{53}	B_{24}	B_{23}	B_{86}	B_{16}	B_{85}	B_{13}	B_{52}	B_{09}	B_{51}	B_{10}	B_{26}	B_{02}
B_{85}	B_{85}	B_{86}	B_{51}	B_{52}	B_{25}	B_{26}	B_{13}	B_{84}	B_{16}	B_{83}	B_{10}	B_{54}	B_{09}	B_{53}	B_{06}	B_{24}
B_{86}	B_{86}	B_{85}	B_{52}	B_{51}	B_{26}	B_{25}	B_{90}	B_{13}	B_{83}	B_{16}	B_{54}	B_{10}	B_{53}	B_{09}	B_{30}	B_{06}
B_{87}	B_{87}	B_{89}	B_{57}	B_{59}	B_{27}	B_{29}	B_{88}	B_{91}	B_{90}	B_{92}	B_{58}	B_{61}	B_{60}	B_{62}	B_{28}	B_{31}
B_{88}	B_{88}	B_{90}	B_{58}	B_{60}	B_{28}	B_{30}	B_{87}	B_{92}	B_{89}	B_{91}	B_{57}	B_{62}	B_{59}	B_{61}	B_{27}	B_{22}
B_{89}	B_{89}	B_{87}	B_{59}	B_{57}	B_{29}	B_{27}	B_{91}	B_{88}	B_{92}	B_{90}	B_{61}	B_{58}	B_{62}	B_{60}	B_{31}	B_{28}
B_{90}	B_{90}	B_{88}	B_{60}	B_{58}	B_{30}	B_{28}	B_{92}	B_{87}	B_{91}	B_{89}	B_{62}	B_{57}	B_{61}	B_{59}	B_{32}	B_{27}
B_{91}	B_{91}	B_{92}	B_{61}	B_{62}	B_{31}	B_{32}	B_{89}	B_{90}	B_{87}	B_{88}	B_{59}	B_{60}	B_{57}	B_{58}	B_{29}	B_{30}
B_{92}	B_{92}	B_{91}	B_{62}	B_{61}	B_{32}	B_{31}	B_{90}	B_{89}	B_{88}	B_{87}	B_{60}	B_{59}	B_{58}	B_{57}	B_{30}	B_{29}
B_{93}	B_{93}	B_{94}	B_{63}	B_{64}	B_{33}	B_{34}	B_{15}	B_{96}	B_{17}	B_{95}	B_{11}	B_{66}	B_{07}	B_{65}	B_{05}	B_{36}
B_{94}	B_{94}	B_{93}	B_{64}	B_{63}	B_{34}	B_{33}	B_{96}	B_{15}	B_{95}	B_{17}	B_{66}	B_{11}	B_{65}	B_{07}	B_{36}	B_{05}
B_{95}	B_{95}	B_{96}	B_{65}	B_{66}	B_{35}	B_{36}	B_{17}	B_{94}	B_{15}	B_{93}	B_{07}	B_{64}	B_{11}	B_{63}	B_{01}	B_{34}
B_{96}	B_{96}	B_{95}	B_{66}	B_{65}	B_{36}	B_{35}	B_{94}	B_{17}	B_{93}	B_{15}	B_{64}	B_{07}	B_{63}	B_{11}	B_{34}	B_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
B_{73}	B_{76}	B'_{45}	B'_{08}	B'_{09}	B_{77}	B_{47}	B_{78}	B_{48}	B_{43}	C_{05}	B_{43}	B_{45}	B_{45}	C_{12}	B_{73}	B_{73}
B_{74}	B_{75}	B'_{44}	B'_{09}	B'_{08}	B_{78}	B_{48}	B_{77}	B_{47}	B_{44}	C_{06}	B_{44}	B_{46}	B_{46}	C_{13}	B_{74}	B_{74}
B_{75}	B_{78}	B'_{43}	B'_{05}	B'_{07}	B_{74}	B_{44}	B_{76}	B_{46}	B_{45}	C_{05}	B_{45}	B_{43}	B_{43}	C_{12}	B_{75}	B_{75}
B_{76}	B_{77}	B'_{42}	B'_{04}	B'_{06}	B_{73}	B_{43}	B_{75}	B_{45}	B_{46}	C_{06}	B_{46}	B_{44}	B_{44}	C_{13}	B_{76}	B_{76}
B_{77}	B_{73}	B'_{41}	B'_{07}	B'_{05}	B_{76}	B_{46}	B_{74}	B_{44}	B_{47}	C_{61}	B_{47}	B_{48}	B_{48}	C_{73}	B_{77}	B_{77}
B_{78}	B_{74}	B'_{40}	B'_{06}	B'_{04}	B_{75}	B_{45}	B_{73}	B_{43}	B_{48}	C_{61}	B_{48}	B_{47}	B_{47}	C_{73}	B_{78}	B_{78}
B_{79}	B_{04}	B_{21}	B'_{11}	B'_{10}	B'_{13}	B'_{15}	B'_{12}	B'_{14}	C_{11}	B_{20}	B_{19}	B_{20}	C_{04}	B_{19}	C_{18}	B_{55}
B_{80}	B_{21}	B_{04}	B'_{13}	B'_{15}	B'_{11}	B'_{10}	B'_{14}	B'_{12}	C_{11}	B_{19}	B_{20}	B_{19}	C_{04}	B_{20}	C_{18}	B_{56}
B_{81}	B_{03}	B_{19}	B'_{14}	B'_{12}	B'_{15}	B'_{13}	B'_{10}	B'_{11}	C_{74}	B_{22}	B_{21}	B_{22}	C_{62}	B_{21}	C_{80}	B_{49}
B_{82}	B_{19}	B_{03}	B'_{15}	B'_{13}	B'_{14}	B'_{12}	B'_{11}	B'_{10}	C_{74}	B_{21}	B_{22}	B_{21}	C_{62}	B_{22}	C_{80}	B_{50}
B_{83}	B_{06}	B_{25}	B'_{17}	B'_{16}	B'_{19}	B'_{21}	B'_{18}	B'_{20}	C_{12}	B_{24}	B_{23}	B_{24}	C_{05}	B_{23}	C_{19}	B_{53}
B_{84}	B_{25}	B_{06}	B'_{19}	B'_{21}	B'_{17}	B'_{16}	B'_{20}	B'_{18}	C_{12}	B_{23}	B_{24}	B_{23}	C_{05}	B_{24}	C_{19}	B_{54}
B_{85}	B_{02}	B_{23}	B'_{20}	B'_{18}	B'_{21}	B'_{19}	B'_{16}	B'_{17}	C_{76}	B_{26}	B_{25}	B_{26}	C_{64}	B_{25}	C_{82}	B_{51}
B_{86}	B_{23}	B_{02}	B'_{21}	B'_{19}	B'_{20}	B'_{18}	B'_{17}	B'_{16}	C_{76}	B_{25}	B_{26}	B_{25}	C_{64}	B_{26}	C_{82}	B_{52}
B_{87}	B_{30}	B_{32}	B'_{22}	B'_{23}	B'_{24}	B'_{26}	B'_{25}	B'_{27}	C_{11}	B_{29}	B_{27}	B_{29}	C_{04}	B_{27}	C_{18}	B_{57}
B_{88}	B_{29}	B_{31}	B'_{23}	B'_{22}	B'_{25}	B'_{27}	B'_{24}	B'_{26}	C_{12}	B_{30}	B_{28}	B_{30}	C_{05}	B_{28}	C_{19}	B_{58}
B_{89}	B_{32}	B_{30}	B'_{24}	B'_{26}	B'_{22}	B'_{23}	B'_{27}	B'_{25}	C_{11}	B_{27}	B_{29}	B_{27}	C_{04}	B_{29}	C_{18}	B_{59}
B_{90}	B_{31}	B_{29}	B'_{25}	B'_{27}	B'_{23}	B'_{22}	B'_{26}	B'_{24}	C_{12}	B_{28}	B_{30}	B_{28}	C_{05}	B_{30}	C_{19}	B_{60}
B_{91}	B_{27}	B_{28}	B'_{26}	B'_{24}	B'_{27}	B'_{25}	B_{22}	B'_{23}	C_{78}	B_{32}	B_{31}	B_{32}	C_{66}	B_{31}	C_{84}	B_{61}
B_{92}	B_{28}	B_{27}	B'_{27}	B'_{25}	B'_{26}	B'_{24}	B'_{23}	B'_{22}	C_{78}	B_{31}	B_{32}	B_{31}	C_{66}	B_{32}	C_{84}	B_{62}
B_{93}	B_{02}	B_{35}	B'_{29}	B'_{28}	B'_{31}	B'_{33}	B'_{30}	B'_{32}	C_{13}	B_{34}	B_{33}	B_{34}	C_{06}	B_{33}	C_{20}	B_{63}
B_{94}	B_{35}	B_{01}	B'_{31}	B'_{33}	B'_{29}	B'_{28}	B'_{32}	B'_{30}	C_{13}	B_{33}	B_{34}	B_{33}	C_{06}	B_{34}	C_{20}	B_{64}
B_{95}	B_{05}	B_{33}	B'_{32}	B'_{30}	B'_{33}	B'_{31}	B'_{28}	B_{29}	C_{77}	B_{36}	B_{35}	B_{36}	C_{65}	B_{35}	C_{83}	B_{65}
B_{96}	B_{33}	B_{05}	B'_{33}	B'_{31}	B'_{32}	B'_{30}	B'_{29}	B'_{28}	C_{77}	B_{35}	B_{36}	B_{35}	C_{65}	B_{36}	C_{83}	B_{66}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B_{73}	C_{05}	C_{19}	B_{75}	B_{75}	C_{19}	B'_{04}	B'_{06}	C_{12}	B'_{04}	B'_{06}	B_{44}	B_{46}	B_{47}	B_{48}	C_{27}	C_{31}
B_{74}	C_{06}	C_{20}	B_{76}	B_{76}	C_{20}	B'_{05}	B'_{07}	C_{13}	B'_{05}	B'_{07}	B_{43}	B_{45}	B_{48}	B_{47}	C_{28}	C_{32}
B_{75}	C_{05}	C_{19}	B_{73}	B_{73}	C_{19}	B'_{06}	B'_{04}	C_{12}	B'_{06}	B'_{04}	B_{47}	B_{48}	B_{44}	B_{46}	C_{27}	C_{31}
B_{76}	C_{06}	C_{20}	B_{74}	B_{74}	C_{20}	B'_{07}	B'_{05}	C_{13}	B'_{07}	B'_{05}	B_{48}	B_{47}	B_{43}	B_{45}	C_{28}	C_{32}
B_{77}	C_{61}	C_{79}	B_{78}	B_{78}	C_{79}	B'_{08}	B'_{09}	C_{73}	B'_{08}	B'_{09}	B_{45}	B_{43}	B_{46}	B_{44}	C_{49}	C_{50}
B_{78}	C_{61}	C_{79}	B_{77}	B_{77}	C_{79}	B'_{09}	B'_{08}	C_{73}	B'_{09}	B'_{08}	B_{46}	B_{44}	B_{45}	B_{43}	C_{49}	C_{50}
B_{79}	B_{56}	B_{55}	C_{04}	B_{56}	B_{79}	B_{79}	C_{11}	B_{80}	C_{18}	B_{80}	B_{03}	B_{04}	B_{22}	B_{21}	B_{22}	B_{21}
B_{80}	B_{55}	B_{56}	C_{04}	B_{55}	B_{80}	B_{80}	C_{11}	B_{79}	C_{18}	B_{79}	B_{22}	B_{21}	B_{03}	B_{04}	B_{03}	B_{04}
B_{81}	B_{50}	B_{49}	C_{62}	B_{50}	B_{81}	B_{81}	C_{74}	B_{82}	C_{80}	B_{82}	B_{04}	B_{03}	B_{20}	B_{19}	B_{20}	B_{19}
B_{82}	B_{49}	B_{50}	C_{62}	B_{49}	B_{82}	B_{82}	C_{74}	B_{81}	C_{80}	B_{81}	B_{20}	B_{19}	B_{04}	B_{03}	B_{04}	B_{03}
B_{83}	B_{54}	B_{53}	C_{05}	B_{54}	B_{83}	B_{83}	C_{12}	B_{84}	C_{19}	B_{84}	B_{02}	B_{06}	B_{26}	B_{25}	B_{26}	B_{25}
B_{84}	B_{53}	B_{54}	C_{05}	B_{53}	B_{84}	B_{84}	C_{12}	B_{83}	C_{19}	B_{83}	B_{26}	B_{25}	B_{02}	B_{06}	B_{02}	B_{06}
B_{85}	B_{52}	B_{51}	C_{64}	B_{52}	B_{85}	B_{85}	C_{76}	B_{86}	C_{82}	B_{86}	B_{06}	B_{02}	B_{24}	B_{23}	B_{24}	B_{23}
B_{86}	B_{51}	B_{52}	C_{64}	B_{51}	B_{86}	B_{86}	C_{76}	B_{85}	C_{82}	B_{85}	B_{24}	B_{23}	B_{06}	B_{02}	B_{06}	B_{02}
B_{87}	B_{59}	B_{57}	C_{04}	B_{59}	B_{87}	B_{87}	C_{11}	B_{89}	C_{18}	B_{89}	B_{28}	B_{30}	B_{31}	B_{32}	B_{31}	B_{32}
B_{88}	B_{60}	B_{58}	C_{05}	B_{60}	B_{88}	B_{88}	C_{12}	B_{90}	C_{19}	B_{90}	B_{27}	B_{29}	B_{32}	B_{31}	B_{32}	B_{31}
B_{89}	B_{57}	B_{59}	C_{04}	B_{57}	B_{89}	B_{89}	C_{11}	B_{87}	C_{18}	B_{87}	B_{31}	B_{32}	B_{28}	B_{30}	B_{28}	B_{30}
B_{90}	B_{58}	B_{60}	C_{05}	B_{58}	B_{90}	B_{90}	C_{12}	B_{88}	C_{19}	B_{88}	B_{32}	B_{31}	B_{27}	B_{29}	B_{27}	B_{29}
B_{91}	B_{62}	B_{61}	C_{66}	B_{62}	B_{91}	B_{91}	C_{78}	B_{92}	C_{84}	B_{92}	B_{29}	B_{27}	B_{30}	B_{28}	B_{30}	B_{28}
B_{92}	B_{61}	B_{62}	C_{66}	B_{61}	B_{92}	B_{92}	C_{78}	B_{91}	C_{84}	B_{91}	B_{30}	B_{28}	B_{29}	B_{27}	B_{29}	B_{27}
B_{93}	B_{64}	B_{63}	C_{06}	B_{64}	B_{93}	B_{93}	C_{13}	B_{94}	C_{20}	B_{94}	B_{05}	B_{02}	B_{36}	B_{35}	B_{36}	B_{35}
B_{94}	B_{63}	B_{64}	C_{06}	B_{63}	B_{94}	B_{94}	C_{13}	B_{93}	C_{20}	B_{93}	B_{36}	B_{35}	B_{05}	B_{01}	B_{05}	B_{01}
B_{95}	B_{66}	B_{65}	C_{65}	B_{66}	B_{95}	B_{95}	C_{77}	B_{96}	C_{83}	B_{96}	B_{01}	B_{05}	B_{34}	B_{33}	B_{34}	B_{33}
B_{96}	B_{65}	B_{66}	C_{65}	B_{65}	B_{96}	B_{96}	C_{77}	B_{95}	C_{83}	B_{95}	B_{34}	B_{33}	B_{01}	B_{05}	B_{01}	B_{05}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{73}	C_{16}	C_{09}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{47}	B_{48}	B_{44}	B_{46}	B_{46}	B_{48}	B_{44}	B_{47}
B_{74}	C_{17}	C_{10}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{48}	B_{47}	B_{43}	B_{45}	B_{45}	B_{47}	B_{43}	B_{48}
B_{75}	C_{16}	C_{09}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	B_{44}	B_{46}	B_{47}	B_{48}	B_{48}	B_{46}	B_{47}	B_{44}
B_{76}	C_{17}	C_{10}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	B_{43}	B_{45}	B_{48}	B_{47}	B_{47}	B_{45}	B_{48}	B_{43}
B_{77}	C_{74}	C_{62}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{46}	B_{44}	B_{45}	B_{43}	B_{43}	B_{44}	B_{45}	B_{46}
B_{78}	C_{74}	C_{62}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{45}	B_{43}	B_{46}	B_{44}	B_{44}	B_{43}	B_{46}	B_{45}
B_{79}	B_{03}	B_{04}	B_{04}	B_{21}	B_{03}	B_{22}	B_{19}	B_{20}	C_{26}	C_{30}	C_{15}	C_{08}	C_{01}	C_{25}	C_{02}	C_{29}
B_{80}	B_{22}	B_{21}	B_{21}	B_{04}	B_{22}	B_{03}	B_{20}	B_{19}	C_{26}	C_{30}	C_{15}	C_{08}	C_{62}	C_{50}	C_{74}	C_{49}
B_{81}	B_{04}	B_{03}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	C_{50}	C_{49}	C_{73}	C_{61}	C_{01}	C_{25}	C_{02}	C_{29}
B_{82}	B_{20}	B_{19}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	C_{50}	C_{49}	C_{73}	C_{61}	C_{04}	C_{26}	C_{11}	C_{30}
B_{83}	B_{02}	B_{06}	B_{06}	B_{25}	B_{02}	B_{26}	B_{23}	B_{24}	C_{27}	C_{31}	C_{16}	C_{09}	C_{01}	C_{25}	C_{02}	C_{29}
B_{84}	B_{26}	B_{25}	B_{25}	B_{06}	B_{26}	B_{02}	B_{24}	B_{23}	C_{27}	C_{31}	C_{16}	C_{09}	C_{64}	C_{52}	C_{76}	C_{51}
B_{85}	B_{06}	B_{02}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	C_{52}	C_{51}	C_{75}	C_{63}	C_{01}	C_{25}	C_{02}	C_{29}
B_{86}	B_{24}	B_{23}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	C_{52}	C_{51}	C_{75}	C_{63}	C_{05}	C_{27}	C_{12}	C_{31}
B_{87}	B_{28}	B_{30}	B_{30}	B_{32}	B_{28}	B_{31}	B_{27}	B_{29}	C_{26}	C_{30}	C_{15}	C_{08}	C_{05}	C_{27}	C_{12}	C_{31}
B_{88}	B_{27}	B_{29}	B_{29}	B_{31}	B_{27}	B_{32}	B_{28}	B_{30}	C_{27}	C_{31}	C_{16}	C_{09}	C_{04}	C_{26}	C_{11}	C_{30}
B_{89}	B_{31}	B_{32}	B_{32}	B_{30}	B_{31}	B_{28}	B_{29}	B_{27}	C_{26}	C_{30}	C_{15}	C_{08}	C_{66}	C_{54}	C_{78}	C_{53}
B_{90}	B_{32}	B_{31}	B_{31}	B_{29}	B_{32}	B_{27}	B_{30}	B_{28}	C_{27}	C_{31}	C_{16}	C_{09}	C_{66}	C_{54}	C_{78}	C_{53}
B_{91}	B_{29}	B_{27}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	C_{54}	C_{53}	C_{77}	C_{65}	C_{04}	C_{26}	C_{11}	C_{30}
B_{92}	B_{30}	B_{28}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	C_{54}	C_{53}	C_{77}	C_{65}	C_{05}	C_{27}	C_{12}	C_{31}
B_{93}	B_{05}	B_{02}	B_{02}	B_{35}	B_{05}	B_{36}	B_{33}	B_{34}	C_{28}	C_{32}	C_{17}	C_{10}	C_{01}	C_{25}	C_{02}	C_{29}
B_{94}	B_{36}	B_{35}	B_{35}	B_{01}	B_{36}	B_{05}	B_{34}	B_{33}	C_{28}	C_{32}	C_{17}	C_{10}	C_{65}	C_{53}	C_{77}	C_{54}
B_{95}	B_{01}	B_{05}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	C_{53}	C_{54}	C_{78}	C_{66}	C_{01}	C_{25}	C_{02}	C_{29}
B_{96}	B_{34}	B_{33}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	C_{53}	C_{54}	C_{78}	C_{66}	C_{06}	C_{28}	C_{13}	C_{32}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{73}	B_{43}	B_{45}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	B_{77}	B_{78}	C_{23}	C_{09}	C_{35}	C_{39}	B_{74}	B_{76}
B_{74}	B_{44}	B_{46}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	B_{78}	B_{77}	C_{24}	C_{10}	C_{36}	C_{40}	B_{73}	B_{75}
B_{75}	B_{45}	B_{43}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{74}	B_{76}	C_{23}	C_{09}	C_{35}	C_{39}	B_{77}	B_{78}
B_{76}	B_{46}	B_{44}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{73}	B_{75}	C_{24}	C_{10}	C_{36}	C_{40}	B_{78}	B_{77}
B_{77}	B_{47}	B_{48}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	B_{76}	B_{74}	C_{80}	C_{62}	C_{55}	C_{56}	B_{75}	B_{73}
B_{78}	B_{48}	B_{47}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	B_{75}	B_{73}	C_{80}	C_{62}	C_{55}	C_{56}	B_{76}	B_{74}
B_{79}	C_{14}	C_{07}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	B_{50}	B_{49}	B_{08}	B_{12}	B_{50}	B_{49}	B_{08}	B_{12}
B_{80}	C_{73}	C_{61}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{08}	B_{12}	B_{50}	B_{49}	B_{08}	B_{12}	B_{50}	B_{49}
B_{81}	C_{14}	C_{07}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{56}	B_{55}	B_{12}	B_{08}	B_{56}	B_{55}	B_{12}	B_{08}
B_{82}	C_{15}	C_{08}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{12}	B_{08}	B_{56}	B_{55}	B_{12}	B_{08}	B_{56}	B_{55}
B_{83}	C_{14}	C_{07}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	B_{52}	B_{51}	B_{09}	B_{10}	B_{52}	B_{51}	B_{09}	B_{10}
B_{84}	C_{75}	C_{63}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{09}	B_{10}	B_{52}	B_{51}	B_{09}	B_{10}	B_{52}	B_{51}
B_{85}	C_{14}	C_{07}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{54}	B_{53}	B_{10}	B_{09}	B_{54}	B_{53}	B_{10}	B_{09}
B_{86}	C_{16}	C_{09}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{10}	B_{09}	B_{54}	B_{53}	B_{10}	B_{09}	B_{54}	B_{53}
B_{87}	C_{16}	C_{09}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	B_{61}	B_{62}	B_{58}	B_{60}	B_{61}	B_{62}	B_{58}	B_{60}
B_{88}	C_{15}	C_{08}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	B_{62}	B_{61}	B_{57}	B_{59}	B_{62}	B_{61}	B_{57}	B_{59}
B_{89}	C_{77}	C_{65}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{58}	B_{60}	B_{61}	B_{62}	B_{58}	B_{60}	B_{61}	B_{62}
B_{90}	C_{77}	C_{65}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{57}	B_{59}	B_{62}	B_{61}	B_{57}	B_{59}	B_{62}	B_{61}
B_{91}	C_{15}	C_{08}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{60}	B_{58}	B_{59}	B_{57}	B_{60}	B_{58}	B_{59}	B_{57}
B_{92}	C_{16}	C_{09}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{59}	B_{57}	B_{60}	B_{58}	B_{59}	B_{57}	B_{60}	B_{58}
B_{93}	C_{14}	C_{07}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	B_{66}	B_{65}	B_{11}	B_{07}	B_{66}	B_{65}	B_{11}	B_{07}
B_{94}	C_{78}	C_{66}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{11}	B_{07}	B_{66}	B_{65}	B_{11}	$_{07}$	$_{66}$	B_{65}
B_{95}	C_{14}	C_{07}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{64}	B_{63}	B_{07}	B_{11}	B_{64}	B_{63}	B_{07}	B_{11}
B_{96}	C_{17}	C_{10}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	B_{07}	B_{11}	B_{64}	B_{63}	B_{07}	B_{11}	B_{64}	B_{63}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{73}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{77}	B_{78}	B_{74}	B_{76}	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}
B_{74}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{78}	B_{77}	B_{73}	B_{75}	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}
B_{75}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	B_{74}	B_{76}	B_{77}	B_{78}	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}
B_{76}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	B_{73}	B_{75}	B_{78}	B_{77}	B_{77}	B_{75}	B_{78}	B_{73}	B_{76}	B_{74}
B_{77}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{76}	B_{74}	B_{75}	B_{73}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}
B_{78}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{75}	B_{73}	B_{76}	B_{74}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}
B_{79}	C_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}	C_{34}	C_{38}	C_{22}	C_{08}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{80}	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}	C_{34}	C_{38}	C_{22}	C_{08}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}
B_{81}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	C_{56}	C_{55}	C_{79}	C_{61}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{82}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	C_{56}	C_{55}	C_{79}	C_{61}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{83}	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}	C_{35}	C_{39}	C_{23}	C_{09}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{84}	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}	C_{35}	C_{39}	C_{23}	C_{09}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}
B_{85}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	C_{58}	C_{57}	C_{81}	C_{63}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{86}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	C_{58}	C_{57}	C_{81}	C_{63}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{87}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}	C_{34}	C_{38}	C_{22}	C_{08}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{88}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}	C_{35}	C_{39}	C_{23}	C_{09}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{89}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}	C_{34}	C_{38}	C_{22}	C_{08}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}
B_{90}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}	C_{35}	C_{39}	C_{23}	C_{09}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}
B_{91}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	C_{60}	C_{59}	C_{83}	C_{65}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{92}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	C_{60}	C_{59}	C_{83}	C_{65}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{93}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}	C_{36}	C_{40}	C_{24}	C_{10}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{94}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}	C_{36}	C_{40}	C_{24}	C_{10}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}
B_{95}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	C_{59}	C_{60}	C_{84}	C_{66}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
B_{96}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	C_{59}	C_{60}	C_{84}	C_{66}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B_{73}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	C_{43}	C_{47}	C_{23}	C_{16}	C_{13}	C_{44}
B_{74}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	C_{44}	C_{48}	C_{24}	C_{17}	C_{12}	C_{43}
B_{75}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B'_{08}	B'_{09}	B'_{05}	B'_{07}	C_{43}	C_{47}	C_{23}	C_{16}	C_{73}	C_{67}
B_{76}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	C_{44}	C_{48}	C_{24}	C_{17}	C_{73}	C_{67}
B_{77}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	C_{67}	C_{68}	C_{80}	C_{74}	C_{12}	C_{43}
B_{78}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	C_{67}	C_{68}	C_{80}	C_{74}	C_{13}	C_{44}
B_{79}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	B_{14}	B_{18}	B_{82}	B_{81}	B_{82}	B_{81}	B_{14}	B_{18}	B_{18}	B_{81}
B_{80}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{82}	B_{81}	B_{14}	B_{18}	B_{14}	B_{18}	B_{82}	B_{81}	B_{81}	B_{18}
B_{81}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{18}	B_{14}	B_{80}	B_{79}	B_{80}	B_{79}	B_{18}	B_{14}	B_{14}	B_{79}
B_{82}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{80}	B_{79}	B_{18}	B_{14}	B_{18}	B_{14}	B_{80}	B_{79}	B_{79}	B_{14}
B_{83}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	B_{16}	B_{13}	B_{86}	B_{85}	B_{86}	B_{85}	B_{16}	B_{13}	B_{13}	B_{85}
B_{84}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{86}	B_{85}	B_{16}	B_{13}	B_{16}	B_{13}	B_{86}	B_{85}	B_{85}	B_{13}
B_{85}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{13}	B_{16}	B_{84}	B_{83}	B_{84}	B_{83}	B_{13}	B_{16}	B_{16}	B_{83}
B_{86}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{84}	B_{83}	B_{13}	B_{16}	B_{13}	B_{16}	B_{84}	B_{83}	B_{83}	B_{16}
B_{87}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	B_{88}	B_{90}	B_{91}	B_{92}	B_{91}	B_{92}	B_{88}	B_{90}	B_{90}	B_{92}
B_{88}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	B_{87}	B_{89}	B_{92}	B_{91}	B_{92}	B_{91}	B_{87}	B_{89}	B_{89}	B_{91}
B_{89}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{91}	B_{92}	B_{88}	B_{90}	B_{88}	B_{90}	B_{91}	B_{92}	B_{92}	B_{90}
B_{90}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{92}	B_{91}	B_{87}	B_{89}	B_{87}	B_{89}	B_{92}	B_{91}	B_{91}	B_{89}
B_{91}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B_{89}	B_{87}	B_{90}	B_{88}	B_{90}	B_{88}	B_{89}	B_{87}	B_{87}	B_{88}
B_{92}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B_{90}	B_{88}	B_{89}	B_{87}	B_{89}	B_{87}	B_{90}	B_{88}	B_{88}	B_{87}
B_{93}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	B_{15}	B_{17}	B_{96}	B_{95}	B_{96}	B_{95}	B_{15}	B_{17}	B_{17}	B_{95}
B_{94}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{96}	B_{95}	B_{15}	B_{17}	B_{15}	B_{17}	B_{96}	B_{95}	B_{95}	B_{17}
B_{95}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{17}	B_{15}	B_{94}	B_{93}	B_{94}	B_{93}	B_{17}	B_{15}	B_{15}	B_{93}
B_{96}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	B_{94}	B_{93}	B_{17}	B_{15}	B_{17}	B_{15}	B_{94}	B_{93}	B_{93}	B_{15}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B_{73}	C_{20}	C_{48}	C_{24}	C_{17}	B'_{08}	B'_{09}	B'_{05}	B'_{07}	B'_{07}	B'_{09}	B'_{05}	B'_{08}	C_{04}	B'_{06}	C_{67}	C_{73}
B_{74}	C_{19}	C_{47}	C_{23}	C_{16}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	B'_{06}	B'_{08}	B'_{04}	B'_{09}	B'_{05}	B'_{07}	C_{67}	C_{73}
B_{75}	C_{79}	C_{68}	C_{80}	C_{74}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B'_{09}	B'_{07}	B'_{08}	B'_{05}	B'_{06}	B'_{04}	C_{44}	C_{13}
B_{76}	C_{79}	C_{68}	C_{80}	C_{74}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B'_{08}	B'_{06}	B'_{09}	B'_{04}	B'_{07}	B'_{05}	C_{43}	C_{12}
B_{77}	C_{19}	C_{47}	C_{23}	C_{16}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	B'_{04}	B'_{05}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	C_{44}	C_{13}
B_{78}	C_{20}	C_{48}	C_{24}	C_{17}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	B'_{05}	B'_{04}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	C_{43}	C_{12}
B_{79}	B_{14}	B_{82}	B_{79}	B_{80}	C_{42}	C_{46}	C_{22}	C_{15}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{74}	C_{68}
B_{80}	B_{82}	B_{14}	B_{80}	B_{79}	C_{42}	C_{46}	C_{22}	C_{15}	C_{74}	C_{68}	C_{80}	C_{67}	C_{79}	C_{73}	C_{02}	C_{41}
B_{81}	B_{18}	B_{80}	B_{81}	B_{82}	C_{68}	C_{67}	C_{79}	C_{73}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{11}	C_{42}
B_{82}	B_{80}	B_{18}	B_{82}	B_{81}	C_{68}	C_{67}	C_{79}	C_{73}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{02}	C_{41}
B_{83}	B_{16}	B_{86}	B_{83}	B_{84}	C_{43}	C_{47}	C_{23}	C_{16}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{76}	C_{70}
B_{84}	B_{86}	B_{16}	B_{84}	B_{83}	C_{43}	C_{47}	C_{23}	C_{16}	C_{76}	C_{70}	C_{82}	C_{69}	C_{81}	C_{75}	C_{02}	C_{41}
B_{85}	B_{13}	B_{84}	B_{85}	B_{86}	C_{70}	C_{69}	C_{81}	C_{75}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{12}	C_{43}
B_{86}	B_{84}	B_{13}	B_{86}	B_{85}	C_{70}	C_{69}	C_{81}	C_{75}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{02}	C_{41}
B_{87}	B_{88}	B_{91}	B_{87}	B_{89}	C_{42}	C_{46}	C_{22}	C_{15}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{78}	C_{72}
B_{88}	B_{87}	B_{92}	B_{88}	B_{90}	C_{43}	C_{47}	C_{23}	C_{16}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{78}	C_{72}
B_{89}	B_{91}	B_{88}	B_{89}	B_{87}	C_{42}	C_{46}	C_{22}	C_{15}	C_{78}	C_{72}	C_{84}	C_{71}	C_{83}	C_{77}	C_{12}	C_{43}
B_{90}	B_{92}	B_{87}	B_{90}	B_{88}	C_{43}	C_{47}	C_{23}	C_{16}	C_{78}	C_{72}	C_{84}	C_{71}	C_{83}	C_{77}	C_{11}	C_{42}
B_{91}	B_{89}	B_{90}	B_{91}	B_{92}	C_{72}	C_{71}	C_{83}	C_{77}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{12}	C_{43}
B_{92}	B_{90}	B_{89}	B_{92}	B_{91}	C_{72}	C_{71}	C_{83}	C_{77}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{11}	C_{42}
B_{93}	B_{15}	B_{96}	B_{93}	B_{94}	C_{44}	C_{48}	C_{24}	C_{17}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{77}	C_{71}
B_{94}	B_{96}	B_{15}	B_{94}	B_{93}	C_{44}	C_{48}	C_{24}	C_{17}	C_{77}	C_{71}	C_{83}	C_{72}	C_{84}	C_{78}	C_{02}	C_{41}
B_{95}	B_{17}	B_{94}	B_{95}	B_{96}	C_{71}	C_{72}	C_{84}	C_{78}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{13}	C_{44}
B_{96}	B_{94}	B_{17}	B_{96}	B_{95}	C_{71}	C_{72}	C_{84}	C_{78}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{02}	C_{41}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{06}	B_{07}	B_{08}	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}
B_{73}	C_{68}	C_{79}	C_{74}	C_{80}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{74}	C_{68}	C_{79}	C_{74}	C_{80}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{75}	C_{48}	C_{20}	C_{17}	C_{24}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
B_{76}	C_{47}	C_{19}	C_{16}	C_{23}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
B_{77}	C_{48}	C_{20}	C_{17}	C_{24}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}
B_{78}	C_{47}	C_{19}	C_{16}	C_{23}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}
B_{79}	C_{80}	C_{67}	C_{79}	C_{73}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}	B_{13}	B_{15}	B_{11}	B_{14}	B_{10}	B_{12}
B_{80}	C_{03}	C_{45}	C_{21}	C_{14}	B_{13}	B_{15}	B_{11}	B_{14}	B_{10}	B_{12}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}
B_{81}	C_{18}	C_{46}	C_{22}	C_{15}	B_{14}	B_{12}	B_{15}	B_{10}	B_{13}	B_{11}	B_{15}	B_{13}	B_{14}	B_{11}	B_{12}	B_{10}
B_{82}	C_{03}	C_{45}	C_{21}	C_{14}	B_{15}	B_{13}	B_{14}	B_{11}	B_{12}	B_{10}	B_{14}	B_{12}	B_{15}	B_{10}	B_{13}	B_{11}
B_{83}	C_{82}	C_{69}	C_{81}	C_{75}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}	B_{19}	B_{21}	B_{17}	B_{20}	B_{16}	B_{18}
B_{84}	C_{03}	C_{45}	C_{21}	C_{14}	B_{19}	B_{21}	B_{17}	B_{20}	B_{16}	B_{18}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}
B_{85}	C_{19}	C_{47}	C_{23}	C_{16}	B_{20}	B_{18}	B_{21}	B_{16}	B_{19}	B_{17}	B_{21}	B_{19}	B_{20}	B_{17}	B_{18}	B_{16}
B_{86}	C_{03}	C_{45}	C_{21}	C_{14}	B_{21}	B_{19}	B_{20}	B_{17}	B_{18}	B_{16}	B_{20}	B_{18}	B_{21}	B_{16}	B_{19}	B_{17}
B_{87}	C_{84}	C_{71}	C_{83}	C_{77}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}
B_{88}	C_{84}	C_{71}	C_{83}	C_{77}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}
B_{89}	C_{19}	C_{47}	C_{23}	C_{16}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}
B_{90}	C_{18}	C_{46}	C_{22}	C_{15}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}
B_{91}	C_{19}	C_{47}	C_{23}	C_{16}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}
B_{92}	C_{18}	C_{46}	C_{22}	C_{15}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}
B_{93}	C_{83}	C_{72}	C_{84}	C_{78}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	B_{31}	B_{33}	B_{29}	B_{32}	B_{28}	B_{30}
B_{94}	C_{03}	C_{45}	C_{21}	C_{14}	B_{31}	B_{33}	B_{29}	B_{32}	B_{38}	B_{30}	B_{29}	B_{38}	B_{31}	B_{30}	B_{33}	B_{32}
B_{95}	C_{20}	C_{48}	C_{24}	C_{17}	B_{32}	B_{30}	B_{33}	B_{28}	B_{31}	B_{29}	B_{33}	B_{31}	B_{32}	B_{29}	B_{30}	B_{28}
B_{96}	C_{03}	C_{45}	C_{21}	C_{14}	B_{33}	B_{31}	B_{32}	B_{29}	B_{30}	B_{28}	B_{32}	B_{30}	B_{33}	B_{28}	B_{31}	B_{29}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B_{73}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	B_{43}	B_{45}	B_{41}	B_{44}
B_{74}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	B_{42}	B_{44}	B_{40}	B_{45}
B_{75}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{45}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{45}	B_{43}	B_{44}	B_{41}
B_{76}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{45}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	B_{44}	B_{42}	B_{45}	B_{40}
B_{77}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	B_{40}	B_{41}	B_{42}	B_{43}
B_{78}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	B_{41}	B_{40}	B_{43}	B_{42}
B_{79}	B_{12}	B_{14}	B_{10}	B_{15}	B_{11}	B_{13}	C_{34}	C_{26}	C_{42}	C_{30}	C_{40}	C_{38}	C_{33}	C_{25}	C_{41}	C_{29}
B_{80}	B_{14}	B_{12}	B_{15}	B_{10}	B_{13}	B_{11}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{56}	C_{40}	C_{68}	C_{49}
B_{81}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	C_{56}	C_{40}	C_{68}	C_{49}	C_{67}	C_{55}	C_{33}	C_{25}	C_{41}	C_{29}
B_{82}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{34}	C_{26}	C_{42}	C_{30}
B_{83}	B_{18}	B_{20}	B_{16}	B_{21}	B_{17}	B_{19}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{33}	C_{25}	C_{41}	C_{29}
B_{84}	B_{20}	B_{18}	B_{21}	B_{16}	B_{19}	B_{17}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{58}	C_{52}	C_{70}	C_{51}
B_{85}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{47}	C_{33}	C_{25}	C_{41}	C_{29}
B_{86}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{35}	C_{27}	C_{43}	C_{31}
B_{87}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{35}	C_{27}	C_{43}	C_{31}
B_{88}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{34}	C_{26}	C_{42}	C_{30}
B_{89}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{60}	C_{54}	C_{72}	C_{53}
B_{90}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{60}	C_{54}	C_{72}	C_{53}
B_{91}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{34}	C_{26}	C_{42}	C_{30}
B_{92}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{35}	C_{27}	C_{43}	C_{31}
B_{93}	B_{30}	B_{32}	B_{28}	B_{33}	B_{29}	B_{31}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{33}	C_{25}	C_{41}	C_{29}
B_{94}	B_{32}	B_{30}	B_{33}	B_{38}	B_{31}	B_{29}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{59}	C_{53}	C_{71}	C_{54}
B_{95}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{33}	C_{25}	C_{41}	C_{29}
B_{96}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{36}	C_{28}	C_{44}	C_{32}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{73}	B_{41}	B_{42}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{05}	C_{12}	C_{19}	C_{06}	D_{01}	C_{61}	C_{09}	C_{10}
B_{74}	B_{41}	B_{43}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{06}	C_{13}	C_{20}	C_{05}	D_{01}	C_{61}	C_{10}	C_{09}
B_{75}	B_{42}	B_{40}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{05}	C_{12}	C_{19}	C_{61}	D_{01}	C_{06}	C_{09}	C_{62}
B_{76}	B_{43}	B_{41}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{06}	C_{13}	C_{20}	C_{61}	D_{01}	C_{05}	C_{10}	C_{62}
B_{77}	B_{44}	B_{45}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{61}	C_{73}	C_{79}	C_{05}	D_{01}	C_{06}	C_{62}	C_{09}
B_{78}	B_{45}	B_{44}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{61}	C_{73}	C_{79}	C_{06}	D_{01}	C_{05}	C_{62}	C_{10}
B_{79}	C_{45}	C_{37}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{04}	C_{11}	C_{18}	C_{01}	C_{62}	D_{01}	C_{08}	C_{07}
B_{80}	C_{67}	C_{55}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{04}	C_{11}	C_{18}	C_{62}	C_{01}	D_{01}	C_{08}	C_{61}
B_{81}	C_{45}	C_{37}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{62}	C_{74}	C_{80}	C_{01}	C_{04}	D_{01}	C_{61}	C_{07}
B_{82}	C_{46}	C_{38}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{62}	C_{74}	C_{80}	C_{04}	C_{01}	D_{01}	C_{61}	C_{08}
B_{83}	C_{45}	C_{37}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{05}	C_{12}	C_{19}	C_{01}	C_{64}	D_{01}	C_{09}	C_{07}
B_{84}	C_{69}	C_{57}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{05}	C_{12}	C_{19}	C_{64}	C_{01}	D_{01}	C_{09}	C_{63}
B_{85}	C_{45}	C_{37}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{64}	C_{76}	C_{82}	C_{01}	C_{05}	D_{01}	C_{63}	C_{07}
B_{86}	C_{47}	C_{39}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{64}	C_{76}	C_{82}	C_{05}	C_{01}	D_{01}	C_{63}	C_{09}
B_{87}	C_{47}	C_{39}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{04}	C_{11}	C_{18}	C_{05}	C_{66}	D_{01}	C_{08}	C_{09}
B_{88}	C_{46}	C_{38}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{05}	C_{12}	C_{19}	C_{04}	C_{66}	D_{01}	C_{09}	C_{08}
B_{89}	C_{71}	C_{59}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{04}	C_{11}	C_{18}	C_{66}	C_{05}	D_{01}	C_{08}	C_{65}
B_{90}	C_{71}	C_{59}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{05}	C_{12}	C_{19}	C_{66}	C_{04}	D_{01}	C_{09}	C_{65}
B_{91}	C_{46}	C_{38}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{66}	C_{78}	C_{84}	C_{04}	C_{05}	D_{01}	C_{65}	C_{08}
B_{92}	C_{47}	C_{39}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{66}	C_{78}	C_{84}	C_{05}	C_{04}	D_{01}	C_{65}	C_{09}
B_{93}	C_{45}	C_{37}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{06}	C_{13}	C_{20}	C_{01}	C_{65}	D_{01}	C_{10}	C_{07}
B_{94}	C_{72}	C_{60}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{06}	C_{13}	C_{20}	C_{65}	C_{01}	D_{01}	C_{10}	C_{66}
B_{95}	C_{45}	C_{37}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{65}	C_{77}	C_{83}	C_{01}	C_{06}	D_{01}	C_{66}	C_{07}
B_{96}	C_{48}	C_{40}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{65}	C_{77}	C_{83}	C_{06}	C_{01}	D_{01}	C_{66}	C_{10}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
B_{73}	D_{04}	C_{62}	C_{13}	D_{02}	C_{73}	C_{16}	C_{17}	D_{04}	C_{74}	C_{20}	D_{03}	C_{79}	C_{23}	C_{24}	D_{04}	C_{80}
B_{74}	D_{04}	C_{62}	C_{12}	D_{04}	C_{73}	C_{17}	C_{16}	D_{04}	C_{74}	C_{19}	D_{03}	C_{79}	C_{24}	C_{23}	D_{04}	C_{80}
B_{75}	D_{04}	C_{10}	C_{73}	D_{02}	C_{13}	C_{16}	C_{74}	D_{04}	C_{17}	C_{79}	D_{03}	C_{20}	C_{23}	C_{80}	D_{04}	C_{24}
B_{76}	D_{04}	C_{09}	C_{73}	D_{02}	C_{12}	C_{17}	C_{74}	D_{04}	C_{16}	C_{79}	D_{03}	C_{19}	C_{24}	C_{80}	D_{04}	C_{23}
B_{77}	D_{04}	C_{10}	C_{12}	D_{02}	C_{13}	C_{74}	C_{16}	D_{04}	C_{17}	C_{19}	D_{03}	C_{20}	C_{80}	C_{23}	D_{04}	C_{24}
B_{78}	D_{04}	C_{09}	C_{13}	D_{02}	C_{12}	C_{74}	C_{17}	D_{04}	C_{16}	C_{20}	D_{03}	C_{19}	C_{80}	C_{24}	D_{04}	C_{23}
B_{79}	C_{61}	D_{04}	C_{02}	C_{74}	D_{02}	C_{15}	C_{14}	C_{73}	D_{04}	C_{03}	C_{80}	D_{03}	C_{22}	C_{21}	C_{79}	D_{04}
B_{80}	C_{04}	D_{04}	C_{74}	C_{02}	D_{02}	C_{15}	C_{73}	C_{14}	D_{04}	C_{80}	C_{03}	D_{03}	C_{22}	C_{79}	C_{21}	D_{04}
B_{81}	C_{08}	D_{04}	C_{02}	C_{11}	D_{02}	C_{73}	C_{14}	C_{15}	D_{04}	C_{03}	C_{18}	D_{03}	C_{79}	C_{21}	C_{22}	D_{04}
B_{82}	C_{07}	D_{04}	C_{11}	C_{02}	D_{02}	C_{73}	C_{15}	C_{14}	D_{04}	C_{18}	C_{03}	D_{03}	C_{79}	C_{22}	C_{21}	D_{04}
B_{83}	C_{63}	D_{04}	C_{02}	C_{76}	D_{02}	C_{16}	C_{14}	C_{75}	D_{04}	C_{03}	C_{82}	D_{03}	C_{23}	C_{21}	C_{81}	D_{04}
B_{84}	C_{07}	D_{04}	C_{76}	C_{02}	D_{02}	C_{16}	C_{75}	C_{14}	D_{04}	C_{82}	C_{03}	D_{03}	C_{23}	C_{81}	C_{21}	D_{04}
B_{85}	C_{09}	D_{04}	C_{02}	C_{12}	D_{02}	C_{75}	C_{14}	C_{16}	D_{04}	C_{03}	C_{19}	D_{03}	C_{81}	C_{21}	C_{23}	D_{04}
B_{86}	C_{07}	D_{04}	C_{12}	C_{02}	D_{02}	C_{75}	C_{16}	C_{14}	D_{04}	C_{19}	C_{03}	D_{03}	C_{81}	C_{23}	C_{21}	D_{04}
B_{87}	C_{65}	D_{04}	C_{12}	C_{78}	D_{02}	C_{15}	C_{16}	C_{77}	D_{04}	C_{19}	C_{84}	D_{03}	C_{22}	C_{23}	C_{83}	D_{04}
B_{88}	C_{65}	D_{04}	C_{11}	C_{78}	D_{02}	C_{16}	C_{15}	C_{77}	D_{04}	C_{18}	$C_{..}$	D_{03}	C_{23}	C_{22}	C_{83}	D_{04}
B_{89}	C_{09}	D_{04}	C_{78}	C_{12}	D_{02}	C_{15}	C_{77}	C_{16}	D_{04}	C_{84}	C_{19}	D_{03}	C_{22}	C_{83}	C_{23}	D_{04}
B_{90}	C_{08}	D_{04}	C_{78}	C_{11}	D_{02}	C_{16}	C_{77}	C_{15}	D_{04}	C_{84}	C_{18}	D_{03}	C_{23}	C_{83}	C_{22}	D_{04}
B_{91}	C_{09}	D_{04}	C_{11}	C_{12}	D_{02}	C_{77}	C_{15}	C_{16}	D_{04}	C_{18}	C_{19}	D_{03}	C_{83}	C_{22}	C_{23}	D_{04}
B_{92}	C_{08}	D_{04}	C_{12}	C_{11}	D_{02}	C_{77}	C_{16}	C_{15}	D_{04}	C_{19}	C_{18}	D_{03}	C_{83}	C_{23}	C_{22}	D_{04}
B_{93}	C_{66}	D_{04}	C_{02}	C_{77}	D_{02}	C_{17}	C_{14}	C_{78}	D_{04}	C_{03}	C_{83}	D_{03}	C_{24}	C_{21}	C_{84}	D_{04}
B_{94}	C_{07}	D_{04}	C_{77}	C_{02}	D_{02}	C_{17}	C_{78}	C_{14}	D_{04}	C_{83}	C_{03}	D_{03}	C_{24}	C_{84}	C_{21}	D_{04}
B_{95}	C_{10}	D_{04}	C_{02}	C_{13}	D_{02}	C_{78}	C_{14}	C_{17}	D_{04}	C_{03}	C_{20}	D_{03}	C_{84}	C_{21}	C_{24}	D_{04}
B_{96}	C_{07}	D_{04}	C_{13}	C_{02}	D_{02}	C_{78}	C_{17}	C_{14}	D_{04}	C_{20}	C_{03}	D_{03}	C_{84}	C_{24}	C_{21}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B_{73}	C_{27}	C_{28}	D_{01}	C_{49}	C_{31}	C_{32}	D_{02}	C_{50}	C_{35}	C_{36}	D_{01}	C_{55}	C_{39}	C_{40}	D_{03}	C_{56}
B_{74}	C_{28}	C_{27}	D_{01}	C_{49}	C_{32}	C_{31}	D_{02}	C_{50}	C_{36}	C_{35}	D_{01}	C_{55}	C_{40}	C_{39}	D_{03}	C_{56}
B_{75}	C_{27}	C_{49}	D_{01}	C_{28}	C_{31}	C_{50}	D_{02}	C_{32}	C_{35}	C_{55}	D_{01}	C_{36}	C_{39}	C_{56}	D_{03}	C_{40}
B_{76}	C_{28}	C_{49}	D_{01}	C_{27}	C_{32}	C_{50}	D_{02}	C_{31}	C_{36}	C_{55}	D_{01}	C_{35}	C_{40}	C_{56}	D_{03}	C_{39}
B_{77}	C_{49}	C_{27}	D_{01}	C_{28}	C_{50}	C_{31}	D_{02}	C_{32}	C_{55}	C_{35}	D_{01}	C_{36}	C_{56}	C_{39}	D_{03}	C_{40}
B_{78}	C_{49}	C_{28}	D_{01}	C_{27}	C_{50}	C_{32}	D_{02}	C_{31}	C_{55}	C_{36}	D_{01}	C_{35}	C_{56}	C_{40}	D_{03}	C_{39}
B_{79}	C_{26}	C_{25}	C_{50}	D_{01}	C_{30}	C_{29}	C_{49}	D_{02}	C_{34}	C_{33}	C_{56}	D_{01}	C_{38}	C_{37}	C_{55}	D_{03}
B_{80}	C_{26}	C_{50}	C_{25}	D_{01}	C_{30}	C_{49}	C_{29}	D_{02}	C_{34}	C_{56}	C_{33}	D_{01}	C_{38}	C_{55}	C_{37}	D_{03}
B_{81}	C_{50}	C_{25}	C_{26}	D_{01}	C_{49}	C_{29}	C_{30}	D_{02}	C_{56}	C_{33}	C_{34}	D_{01}	C_{55}	C_{37}	C_{38}	D_{03}
B_{82}	C_{50}	C_{26}	C_{25}	D_{01}	C_{49}	C_{30}	C_{29}	D_{02}	C_{56}	C_{34}	C_{33}	D_{01}	C_{55}	C_{38}	C_{37}	D_{03}
B_{83}	C_{27}	C_{25}	C_{52}	D_{01}	C_{31}	C_{29}	C_{51}	D_{02}	C_{35}	C_{33}	C_{58}	D_{01}	C_{39}	C_{37}	C_{57}	D_{03}
B_{84}	C_{27}	C_{52}	C_{25}	D_{01}	C_{31}	C_{51}	C_{29}	D_{02}	C_{35}	C_{58}	C_{33}	D_{01}	C_{39}	C_{57}	C_{37}	D_{03}
B_{85}	C_{52}	C_{25}	C_{27}	D_{01}	C_{51}	C_{29}	C_{31}	D_{02}	C_{58}	C_{33}	C_{35}	D_{01}	C_{57}	C_{35}	C_{39}	D_{03}
B_{86}	C_{52}	C_{27}	C_{25}	D_{01}	C_{51}	C_{31}	C_{29}	D_{02}	C_{58}	C_{35}	C_{33}	D_{01}	C_{57}	C_{39}	C_{37}	D_{03}
B_{87}	C_{26}	C_{27}	C_{54}	D_{01}	C_{30}	C_{31}	C_{53}	D_{02}	C_{34}	C_{35}	C_{60}	D_{01}	C_{38}	C_{39}	C_{59}	D_{03}
B_{88}	C_{27}	C_{26}	C_{54}	D_{01}	C_{31}	C_{30}	C_{53}	D_{02}	C_{35}	C_{34}	C_{60}	D_{01}	C_{39}	C_{38}	C_{59}	D_{03}
B_{89}	C_{26}	C_{54}	C_{27}	D_{01}	C_{30}	C_{53}	C_{31}	D_{02}	C_{34}	C_{60}	C_{35}	D_{01}	C_{38}	C_{59}	C_{39}	D_{03}
B_{90}	C_{27}	C_{54}	C_{26}	D_{01}	C_{31}	C_{53}	C_{30}	D_{02}	C_{35}	C_{60}	C_{34}	D_{01}	C_{39}	C_{59}	C_{38}	D_{03}
B_{91}	C_{54}	C_{26}	C_{27}	D_{01}	C_{53}	C_{30}	C_{31}	D_{02}	C_{60}	C_{34}	C_{35}	D_{01}	C_{59}	C_{38}	C_{39}	D_{03}
B_{92}	C_{54}	C_{27}	C_{26}	D_{01}	C_{53}	C_{31}	C_{30}	D_{02}	C_{60}	C_{35}	C_{34}	D_{01}	C_{59}	C_{39}	C_{38}	D_{03}
B_{93}	C_{28}	C_{25}	C_{53}	D_{01}	C_{32}	C_{29}	C_{54}	D_{02}	C_{36}	C_{33}	C_{59}	D_{01}	C_{40}	C_{37}	C_{60}	D_{03}
B_{94}	C_{28}	C_{53}	C_{25}	D_{01}	C_{32}	C_{54}	C_{29}	D_{02}	C_{36}	C_{59}	C_{33}	D_{01}	C_{40}	C_{60}	C_{37}	D_{03}
B_{95}	C_{53}	C_{25}	C_{28}	D_{01}	C_{54}	C_{29}	C_{32}	D_{02}	C_{59}	C_{33}	C_{36}	D_{01}	C_{60}	C_{37}	C_{40}	D_{03}
B_{96}	C_{53}	C_{28}	C_{25}	D_{01}	C_{54}	C_{32}	C_{29}	D_{02}	C_{59}	C_{36}	C_{33}	D_{01}	C_{60}	C_{40}	C_{37}	D_{03}

	c_{41}	c_{42}	c_{43}	c_{44}	c_{45}	c_{56}	c_{47}	c_{48}	c_{49}	c_{50}	c_{51}	c_{52}	c_{53}	c_{54}	c_{55}	c_{56}
B_{73}	c_{43}	c_{44}	D_{02}	c_{67}	c_{47}	c_{48}	D_{03}	c_{68}	c_{50}	c_{49}	c_{27}	c_{31}	c_{28}	c_{32}	c_{56}	c_{55}
B_{74}	c_{44}	c_{43}	D_{02}	c_{67}	c_{43}	c_{47}	D_{03}	c_{68}	c_{50}	c_{49}	c_{28}	c_{32}	c_{27}	c_{31}	c_{56}	c_{55}
B_{75}	c_{43}	c_{67}	D_{02}	c_{44}	c_{47}	c_{68}	D_{03}	c_{48}	c_{32}	c_{28}	c_{27}	c_{31}	c_{49}	c_{50}	c_{40}	c_{36}
B_{76}	c_{44}	c_{67}	D_{02}	c_{43}	c_{48}	c_{68}	D_{03}	c_{47}	c_{31}	c_{27}	c_{28}	c_{32}	c_{49}	c_{50}	c_{39}	c_{35}
B_{77}	c_{67}	c_{43}	D_{02}	c_{44}	c_{68}	c_{47}	D_{03}	c_{48}	c_{32}	c_{28}	c_{49}	c_{50}	c_{27}	c_{31}	c_{40}	c_{36}
B_{78}	c_{67}	c_{44}	D_{02}	c_{43}	c_{68}	c_{48}	D_{03}	c_{47}	c_{31}	c_{27}	c_{49}	c_{50}	c_{28}	c_{32}	c_{39}	c_{35}
B_{79}	c_{42}	c_{41}	c_{68}	D_{02}	c_{46}	c_{45}	c_{67}	D_{03}	c_{49}	c_{50}	c_{29}	c_{25}	c_{30}	c_{26}	c_{55}	c_{56}
B_{80}	c_{42}	c_{68}	c_{41}	D_{02}	c_{46}	c_{67}	c_{45}	D_{03}	c_{29}	c_{25}	c_{49}	c_{50}	c_{30}	c_{26}	c_{37}	c_{33}
B_{81}	c_{68}	c_{41}	c_{42}	D_{02}	c_{67}	c_{45}	c_{46}	D_{03}	c_{30}	c_{26}	c_{29}	c_{25}	c_{49}	c_{50}	c_{38}	c_{34}
B_{82}	c_{68}	c_{42}	c_{41}	D_{02}	c_{67}	c_{46}	c_{45}	D_{03}	c_{29}	c_{25}	c_{30}	c_{26}	c_{49}	c_{50}	c_{37}	c_{33}
B_{83}	c_{43}	c_{41}	c_{70}	D_{02}	c_{47}	c_{45}	c_{69}	D_{03}	c_{51}	c_{52}	c_{29}	c_{25}	c_{31}	c_{27}	c_{57}	c_{58}
B_{84}	c_{43}	c_{70}	c_{41}	D_{02}	c_{47}	c_{69}	c_{45}	D_{03}	c_{29}	c_{25}	c_{51}	c_{52}	c_{31}	c_{27}	c_{37}	c_{33}
B_{85}	c_{70}	c_{41}	c_{43}	D_{02}	c_{69}	c_{45}	c_{47}	D_{03}	c_{31}	c_{27}	c_{29}	c_{25}	c_{51}	c_{52}	c_{39}	c_{35}
B_{86}	c_{70}	c_{43}	c_{41}	D_{02}	c_{69}	c_{47}	c_{45}	D_{03}	c_{29}	c_{25}	c_{31}	c_{27}	c_{51}	c_{52}	c_{37}	c_{33}
B_{87}	c_{42}	c_{43}	c_{72}	D_{02}	c_{46}	c_{47}	c_{71}	D_{03}	c_{53}	c_{54}	c_{31}	c_{27}	c_{30}	c_{26}	c_{59}	c_{60}
B_{88}	c_{43}	c_{42}	c_{72}	D_{02}	c_{47}	c_{46}	c_{71}	D_{03}	c_{53}	c_{54}	c_{30}	c_{26}	c_{31}	c_{27}	c_{59}	c_{60}
B_{89}	c_{44}	c_{72}	c_{43}	D_{02}	c_{46}	c_{71}	c_{47}	D_{03}	c_{31}	c_{27}	c_{53}	c_{54}	c_{30}	c_{26}	c_{39}	c_{35}
B_{90}	c_{43}	c_{72}	c_{42}	D_{02}	c_{47}	c_{71}	c_{46}	D_{03}	c_{30}	c_{26}	c_{53}	c_{54}	c_{31}	c_{27}	c_{38}	c_{34}
B_{91}	c_{72}	c_{42}	c_{43}	D_{02}	c_{71}	c_{46}	c_{47}	D_{03}	c_{31}	c_{27}	c_{30}	c_{26}	c_{53}	c_{54}	c_{39}	c_{35}
B_{92}	c_{72}	c_{43}	c_{42}	D_{02}	c_{71}	c_{47}	c_{46}	D_{03}	c_{30}	c_{26}	c_{31}	c_{27}	c_{53}	c_{54}	c_{38}	c_{34}
B_{93}	c_{44}	c_{41}	c_{71}	D_{02}	c_{48}	c_{45}	c_{72}	D_{03}	c_{54}	c_{53}	c_{29}	c_{25}	c_{32}	c_{28}	c_{60}	c_{59}
B_{94}	c_{44}	c_{71}	c_{41}	D_{02}	c_{48}	c_{72}	c_{45}	D_{03}	c_{29}	c_{25}	c_{54}	c_{53}	c_{32}	c_{28}	c_{37}	c_{33}
B_{95}	c_{71}	c_{41}	c_{44}	D_{02}	c_{72}	c_{45}	c_{48}	D_{03}	c_{32}	c_{28}	c_{29}	c_{25}	c_{54}	c_{53}	c_{40}	c_{36}
B_{96}	c_{71}	c_{44}	c_{41}	D_{02}	c_{72}	c_{48}	c_{45}	D_{03}	c_{29}	c_{25}	c_{32}	c_{28}	c_{54}	c_{53}	c_{37}	c_{33}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
B_{73}	c_{35}	c_{39}	c_{36}	c_{40}	c_{62}	c_{61}	c_{05}	c_{09}	c_{06}	c_{10}	c_{68}	c_{67}	c_{43}	c_{47}	c_{44}	c_{48}
B_{74}	c_{36}	c_{40}	c_{35}	c_{39}	c_{62}	c_{61}	c_{06}	c_{10}	c_{05}	c_{09}	c_{68}	c_{67}	c_{44}	c_{48}	c_{43}	c_{47}
B_{75}	c_{35}	c_{39}	c_{55}	c_{56}	c_{10}	c_{06}	c_{05}	c_{09}	c_{61}	c_{62}	c_{48}	c_{44}	c_{43}	c_{47}	c_{67}	c_{68}
B_{76}	c_{36}	c_{40}	c_{55}	c_{56}	c_{09}	c_{05}	c_{06}	c_{10}	c_{61}	c_{62}	c_{47}	c_{43}	c_{44}	c_{48}	c_{67}	c_{68}
B_{77}	c_{55}	c_{56}	c_{35}	c_{39}	c_{10}	c_{06}	c_{61}	c_{62}	c_{05}	c_{09}	c_{48}	c_{44}	c_{67}	c_{68}	c_{43}	c_{47}
B_{78}	c_{55}	c_{56}	c_{36}	c_{40}	c_{09}	c_{05}	c_{61}	c_{62}	c_{06}	c_{10}	c_{47}	c_{43}	c_{67}	c_{68}	c_{44}	c_{48}
B_{79}	c_{37}	c_{33}	c_{38}	c_{34}	c_{61}	c_{62}	c_{07}	c_{01}	c_{08}	c_{04}	c_{67}	c_{68}	c_{45}	c_{41}	c_{46}	c_{42}
B_{80}	c_{55}	c_{56}	c_{38}	c_{34}	c_{07}	c_{01}	c_{61}	c_{62}	c_{08}	c_{04}	c_{45}	c_{41}	c_{67}	c_{68}	c_{46}	c_{42}
B_{81}	c_{37}	c_{33}	c_{55}	c_{56}	c_{08}	c_{04}	c_{07}	c_{01}	c_{61}	c_{62}	c_{46}	c_{42}	c_{45}	c_{41}	c_{67}	c_{68}
B_{82}	c_{38}	c_{34}	c_{55}	c_{56}	c_{07}	c_{01}	c_{08}	c_{04}	c_{61}	c_{62}	c_{45}	c_{41}	c_{46}	c_{42}	c_{67}	c_{68}
B_{83}	c_{37}	c_{33}	c_{39}	c_{35}	c_{63}	c_{64}	c_{07}	c_{01}	c_{09}	c_{05}	c_{69}	c_{70}	c_{45}	c_{41}	c_{47}	c_{43}
B_{84}	c_{57}	c_{58}	c_{39}	c_{35}	c_{07}	c_{01}	c_{63}	c_{64}	c_{09}	c_{05}	c_{45}	c_{41}	c_{69}	c_{70}	c_{47}	c_{43}
B_{85}	c_{37}	c_{33}	c_{57}	c_{58}	c_{09}	c_{05}	c_{07}	c_{01}	c_{63}	c_{64}	c_{47}	c_{43}	c_{45}	c_{41}	c_{69}	c_{70}
B_{86}	c_{39}	c_{35}	c_{57}	c_{58}	c_{07}	c_{01}	c_{09}	c_{05}	c_{63}	c_{64}	c_{45}	c_{41}	c_{47}	c_{43}	c_{69}	c_{70}
B_{87}	c_{39}	c_{35}	c_{38}	c_{34}	c_{65}	c_{66}	c_{09}	c_{05}	c_{08}	c_{04}	c_{71}	c_{72}	c_{47}	c_{43}	c_{46}	c_{42}
B_{88}	c_{38}	c_{34}	c_{39}	c_{35}	c_{65}	c_{66}	c_{08}	c_{04}	c_{09}	c_{05}	c_{71}	c_{72}	c_{46}	c_{42}	c_{47}	c_{43}
B_{89}	c_{59}	c_{60}	c_{38}	c_{34}	c_{09}	c_{05}	c_{65}	c_{66}	c_{08}	c_{04}	c_{47}	c_{43}	c_{71}	c_{72}	c_{46}	c_{42}
B_{90}	c_{59}	c_{60}	c_{39}	c_{35}	c_{08}	c_{04}	c_{65}	c_{66}	c_{09}	c_{05}	c_{46}	c_{42}	c_{71}	c_{72}	c_{47}	c_{43}
B_{91}	c_{38}	c_{34}	c_{59}	c_{60}	c_{09}	c_{05}	c_{08}	c_{04}	c_{65}	c_{66}	c_{47}	c_{43}	c_{46}	c_{42}	c_{71}	c_{72}
B_{92}	c_{39}	c_{35}	c_{59}	c_{60}	c_{08}	c_{04}	c_{09}	c_{05}	c_{65}	c_{66}	c_{46}	c_{42}	c_{47}	c_{43}	c_{71}	c_{72}
B_{93}	c_{37}	c_{33}	c_{40}	c_{36}	c_{66}	c_{65}	c_{07}	c_{01}	c_{10}	c_{06}	c_{72}	c_{71}	c_{45}	c_{41}	c_{48}	c_{44}
B_{94}	c_{60}	c_{59}	c_{40}	c_{36}	c_{07}	c_{01}	c_{66}	c_{65}	c_{10}	c_{06}	c_{45}	c_{41}	c_{72}	c_{71}	c_{48}	c_{44}
B_{95}	c_{37}	c_{33}	c_{60}	c_{59}	c_{10}	c_{06}	c_{07}	c_{01}	c_{66}	c_{65}	c_{48}	c_{44}	c_{45}	c_{41}	c_{72}	c_{71}
B_{96}	c_{40}	c_{36}	c_{60}	c_{59}	c_{07}	c_{01}	c_{10}	c_{06}	c_{66}	c_{65}	c_{45}	c_{41}	c_{48}	c_{44}	c_{72}	c_{71}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{73}	C_{74}	C_{73}	C_{12}	C_{16}	C_{13}	C_{17}	C_{80}	C_{79}	C_{19}	C_{23}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{74}	C_{74}	C_{73}	C_{13}	C_{17}	C_{12}	C_{16}	C_{80}	C_{79}	C_{20}	C_{24}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{75}	C_{17}	C_{13}	C_{12}	C_{16}	C_{73}	C_{74}	C_{24}	C_{20}	C_{19}	C_{23}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{76}	C_{16}	C_{12}	C_{13}	C_{17}	C_{73}	C_{74}	C_{23}	C_{19}	C_{20}	C_{24}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{77}	C_{17}	C_{13}	C_{73}	C_{74}	C_{12}	C_{16}	C_{24}	C_{20}	C_{79}	C_{80}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
B_{78}	C_{16}	C_{12}	C_{73}	C_{74}	C_{13}	C_{17}	C_{23}	C_{19}	C_{79}	C_{80}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
B_{79}	C_{73}	C_{74}	C_{14}	C_{02}	C_{15}	C_{11}	C_{79}	C_{80}	C_{21}	C_{03}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B_{80}	C_{14}	C_{02}	C_{73}	C_{74}	C_{15}	C_{11}	C_{21}	C_{03}	C_{79}	C_{80}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B_{81}	C_{15}	C_{11}	C_{14}	C_{02}	C_{73}	C_{74}	C_{22}	C_{18}	C_{21}	C_{03}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{82}	C_{14}	C_{02}	C_{15}	C_{11}	C_{73}	C_{74}	C_{21}	C_{03}	C_{22}	C_{18}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B_{83}	C_{75}	C_{76}	C_{14}	C_{02}	C_{16}	C_{12}	C_{81}	C_{82}	C_{21}	C_{03}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B_{84}	C_{14}	C_{02}	C_{75}	C_{76}	C_{16}	C_{12}	C_{21}	C_{03}	C_{81}	C_{82}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B_{85}	C_{16}	C_{12}	C_{14}	C_{02}	C_{75}	C_{76}	C_{23}	C_{19}	C_{21}	C_{03}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{86}	C_{14}	C_{02}	C_{16}	C_{12}	C_{75}	C_{76}	C_{21}	C_{03}	C_{23}	C_{19}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B_{87}	C_{77}	C_{78}	C_{16}	C_{12}	C_{15}	C_{11}	C_{83}	C_{84}	C_{23}	C_{19}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B_{88}	C_{77}	C_{78}	C_{15}	C_{11}	C_{16}	C_{12}	C_{83}	C_{84}	C_{22}	C_{18}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B_{89}	C_{16}	C_{12}	C_{77}	C_{78}	C_{15}	C_{11}	C_{23}	C_{19}	C_{83}	C_{84}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B_{90}	C_{15}	C_{11}	C_{77}	C_{78}	C_{16}	C_{12}	C_{22}	C_{18}	C_{83}	C_{84}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B_{91}	C_{16}	C_{12}	C_{15}	C_{11}	C_{77}	C_{78}	C_{23}	C_{19}	C_{22}	C_{18}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{92}	C_{15}	C_{11}	C_{16}	C_{12}	C_{77}	C_{78}	C_{22}	C_{18}	C_{23}	C_{19}	C_{83}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{93}	C_{78}	C_{77}	C_{14}	C_{02}	C_{17}	C_{13}	C_{84}	C_{83}	C_{21}	C_{03}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B_{94}	C_{14}	C_{02}	C_{78}	C_{77}	C_{17}	C_{13}	C_{21}	C_{03}	C_{84}	C_{83}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B_{95}	C_{17}	C_{13}	C_{14}	C_{02}	C_{78}	C_{77}	C_{24}	C_{20}	C_{21}	C_{03}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B_{96}	C_{14}	C_{02}	C_{17}	C_{13}	C_{78}	C_{77}	C_{21}	C_{03}	C_{24}	C_{20}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{97}	B_{97}	B_{99}	B_{67}	B_{69}	B_{37}	B_{39}	B_{98}	B'_{02}	B'_{01}	B'_{03}	B_{68}	B_{71}	B_{70}	B_{72}	B_{38}	B_{41}
B_{98}	B_{98}	B'_{01}	B_{68}	B_{70}	B_{38}	B_{40}	B_{97}	B'_{03}	B_{99}	B'_{02}	B_{67}	B_{72}	B_{69}	B_{71}	B_{37}	B_{42}
B_{99}	B_{99}	B_{97}	B_{69}	B_{67}	B_{39}	B_{37}	B'_{02}	B_{98}	B'_{03}	B'_{01}	B_{71}	B_{68}	B_{72}	B_{70}	B_{41}	B_{38}
B'_{01}	B'_{01}	B_{98}	B_{70}	B_{68}	B_{40}	B_{38}	B'_{03}	B_{97}	B'_{02}	B_{99}	B_{72}	B_{67}	B_{71}	B_{69}	B_{42}	B_{37}
B'_{02}	B'_{02}	B'_{03}	B_{71}	B_{72}	B_{41}	B_{42}	B_{99}	B'_{01}	B_{97}	B_{98}	B_{69}	B_{70}	B_{67}	B_{63}	$B_{..}$	$B_{..}$
B'_{03}	B'_{03}	B'_{02}	B_{72}	B_{71}	B_{42}	B_{41}	B'_{01}	B_{99}	B_{98}	B_{97}	B_{70}	B_{69}	B_{68}	B_{67}	B_{40}	B_{39}
B'_{04}	B'_{04}	B'_{06}	B_{73}	B_{75}	B_{43}	B_{45}	B'_{05}	B'_{08}	B'_{07}	B'_{09}	B_{74}	B_{77}	B_{76}	B_{78}	B_{44}	B_{47}
B'_{05}	B'_{05}	B'_{07}	B_{74}	B_{76}	B_{44}	B_{46}	B'_{04}	B'_{09}	B'_{06}	B'_{08}	B_{73}	B_{78}	B_{75}	B_{77}	B_{43}	B_{48}
B'_{06}	B'_{06}	B'_{04}	B_{75}	B_{73}	B_{45}	B_{43}	B'_{08}	B'_{05}	B'_{09}	B'_{07}	B_{77}	B_{74}	B_{78}	B_{76}	B_{47}	B_{44}
B'_{07}	B'_{07}	B'_{05}	B_{76}	B_{74}	B_{46}	B_{44}	B'_{09}	B'_{04}	B'_{08}	B'_{06}	B_{78}	B_{73}	B_{77}	B_{75}	B_{48}	B_{43}
B'_{08}	B'_{08}	B'_{09}	B_{77}	B_{78}	B_{47}	B_{48}	B'_{06}	B'_{07}	B'_{04}	B'_{05}	B_{75}	B_{76}	B_{73}	B_{74}	B_{45}	B_{46}
B'_{09}	B'_{09}	B'_{08}	B_{78}	B_{77}	B_{48}	B_{47}	B'_{07}	B'_{06}	B'_{05}	B'_{04}	B_{76}	B_{75}	B_{74}	B_{73}	B_{46}	B_{45}
B'_{10}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B_{03}	B_{19}	B_{08}	B_{55}	B_{04}	B_{20}	B_{14}	B_{79}	B_{12}	B_{56}
B'_{11}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	B_{19}	B_{03}	B_{55}	B_{08}	B_{20}	B_{04}	B_{79}	B_{14}	B_{56}	B_{12}
B'_{12}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	B_{04}	B_{21}	B_{12}	B_{49}	B_{03}	B_{22}	B_{18}	B_{81}	B_{08}	B_{50}
B'_{13}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	B_{20}	B_{22}	B_{56}	B_{50}	B_{19}	B_{21}	B_{80}	B_{82}	B_{55}	B_{49}
B'_{14}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	B_{21}	B_{04}	B_{49}	B_{12}	B_{22}	B_{03}	B_{81}	B_{18}	B_{50}	B_{08}
B'_{15}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	B_{22}	B_{20}	B_{50}	B_{56}	B_{21}	B_{19}	B_{82}	B_{80}	B_{49}	B_{55}
B'_{16}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	B_{02}	B_{23}	B_{09}	B_{53}	B_{06}	B_{24}	B_{16}	B_{83}	B_{10}	B_{54}
B'_{17}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	B_{23}	B_{02}	B_{53}	B_{09}	B_{24}	B_{06}	B_{83}	B_{16}	B_{54}	B_{10}
B'_{18}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	B_{06}	B_{25}	B_{10}	B_{51}	B_{02}	B_{26}	B_{13}	B_{85}	B_{09}	B_{52}
B'_{19}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	B_{24}	B_{26}	B_{54}	B_{52}	B_{23}	B_{25}	B_{84}	B_{86}	B_{53}	B_{51}
B'_{20}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	B_{25}	B_{06}	B_{51}	B_{10}	B_{26}	B_{02}	B_{85}	B_{13}	B_{52}	B_{09}
B'_{21}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	B_{26}	B_{24}	B_{52}	B_{54}	B_{25}	B_{23}	B_{86}	B_{84}	B_{51}	B_{53}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
B_{97}	B_{40}	B_{42}	B'_{34}	B'_{35}	B'_{36}	B'_{38}	B'_{37}	B'_{39}	C_{11}	B_{39}	B_{37}	B_{39}	C_{04}	B_{37}	C_{18}	B_{67}
B_{98}	B_{39}	B_{41}	B'_{35}	B'_{34}	B'_{37}	B'_{39}	B'_{36}	B'_{38}	C_{13}	B_{40}	B_{38}	B_{40}	C_{06}	B_{38}	C_{20}	B_{68}
B_{99}	B_{42}	B_{40}	B'_{36}	B'_{38}	B'_{34}	B'_{35}	B'_{39}	B'_{37}	C_{11}	B_{37}	B_{39}	B_{37}	C_{04}	B_{39}	C_{18}	B_{69}
B'_{01}	B_{41}	B_{39}	B'_{37}	B'_{39}	B'_{35}	B'_{34}	B'_{38}	B'_{36}	C_{13}	B_{38}	B_{40}	B_{38}	C_{06}	B_{40}	C_{20}	B_{70}
B'_{02}	B_{37}	B_{38}	B'_{38}	B'_{36}	B'_{39}	B'_{37}	B'_{34}	B'_{35}	C_{75}	B_{42}	B_{41}	B_{42}	C_{63}	B_{41}	C_{81}	B_{71}
B'_{03}	B_{38}	B_{37}	B'_{39}	B'_{37}	B'_{38}	B'_{36}	B'_{35}	B'_{34}	C_{75}	B_{41}	B_{42}	B_{41}	C_{63}	B_{42}	C_{81}	B_{72}
B'_{04}	B_{46}	B_{48}	B'_{40}	B'_{41}	B'_{42}	B'_{44}	B'_{43}	B'_{45}	C_{12}	B_{45}	B_{43}	B_{45}	C_{05}	B_{43}	C_{19}	B_{73}
B'_{05}	B_{45}	B_{47}	B'_{41}	B'_{40}	B'_{43}	B'_{45}	B'_{42}	B'_{44}	C_{13}	B_{46}	B_{44}	B_{46}	C_{06}	B_{44}	C_{20}	B_{74}
B'_{06}	B_{48}	B_{46}	B'_{42}	B'_{44}	B'_{40}	B'_{41}	B'_{45}	B'_{43}	C_{12}	B_{43}	B_{45}	B_{43}	C_{05}	B_{45}	C_{19}	B_{75}
B'_{07}	B_{47}	B_{45}	B'_{43}	B'_{45}	B'_{41}	B'_{40}	B'_{44}	B'_{42}	C_{13}	B_{44}	B_{46}	B_{44}	C_{06}	B_{46}	C_{20}	B_{76}
B'_{08}	B_{43}	B_{44}	B'_{44}	B'_{42}	B'_{45}	B'_{43}	B'_{40}	B'_{41}	C_{73}	B_{48}	B_{47}	B_{48}	C_{61}	B_{47}	C_{79}	B_{77}
B'_{09}	B_{44}	B_{43}	B'_{45}	B'_{43}	B'_{44}	B'_{42}	B'_{41}	B'_{40}	C_{73}	B_{47}	B_{48}	B_{47}	C_{61}	B_{48}	C_{79}	B_{78}
B'_{10}	B_{18}	B_{80}	B_{21}	B_{49}	B_{22}	B_{50}	B_{81}	B_{82}	C_{49}	C_{26}	C_{25}	C_{29}	C_{50}	C_{30}	C_{55}	C_{33}
B'_{11}	B_{80}	B_{18}	B_{22}	B_{50}	B_{21}	B_{49}	B_{82}	B_{81}	C_{49}	C_{25}	C_{26}	C_{30}	C_{50}	C_{29}	C_{55}	C_{34}
B'_{12}	B_{14}	B_{82}	B_{19}	B_{55}	B_{20}	B_{56}	B_{79}	B_{80}	C_{30}	C_{50}	C_{25}	C_{29}	C_{26}	C_{49}	C_{38}	C_{33}
B'_{13}	B_{79}	B_{81}	B_{03}	B_{08}	B_{04}	B_{12}	B_{14}	B_{18}	C_{29}	C_{50}	C_{26}	C_{30}	C_{25}	C_{49}	C_{37}	C_{34}
B'_{14}	B_{82}	B_{14}	B_{20}	B_{56}	B_{19}	B_{55}	B_{80}	B_{79}	C_{30}	C_{25}	C_{50}	C_{49}	C_{26}	C_{29}	C_{38}	C_{56}
B'_{15}	B_{83}	B_{79}	B_{04}	B_{12}	B_{03}	B_{08}	B_{18}	B_{14}	C_{29}	C_{26}	C_{50}	C_{49}	C_{25}	C_{30}	C_{37}	C_{56}
B'_{16}	B_{13}	B_{84}	B_{25}	B_{51}	B_{26}	B_{52}	B_{85}	B_{86}	C_{51}	C_{27}	C_{25}	C_{29}	C_{52}	C_{31}	C_{57}	C_{33}
B'_{17}	B_{84}	B_{13}	B_{26}	B_{52}	B_{25}	B_{51}	B_{86}	B_{85}	C_{51}	C_{25}	C_{27}	C_{31}	C_{52}	C_{29}	C_{57}	C_{35}
B'_{18}	B_{16}	B_{86}	B_{23}	B_{53}	B_{24}	B_{54}	B_{83}	B_{84}	C_{31}	C_{52}	C_{25}	C_{29}	C_{27}	C_{51}	C_{39}	C_{33}
B'_{19}	B_{83}	B_{85}	B_{02}	B_{09}	B_{06}	B_{10}	B_{16}	B_{13}	C_{29}	C_{52}	C_{27}	C_{31}	C_{25}	C_{51}	C_{37}	C_{35}
B'_{20}	B_{86}	B_{16}	B_{24}	B_{54}	B_{23}	B_{53}	B_{84}	B_{83}	C_{31}	C_{25}	C_{52}	C_{51}	C_{27}	C_{29}	C_{39}	C_{58}
B'_{21}	B_{85}	B_{83}	B_{06}	B_{10}	B_{02}	B_{09}	B_{13}	B_{16}	C_{29}	C_{27}	C_{52}	C_{51}	C_{25}	C_{31}	C_{37}	C_{58}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B_{97}	B_{69}	B_{67}	C_{04}	B_{69}	B_{97}	B_{97}	C_{11}	B_{99}	C_{18}	B_{99}	B_{38}	B_{40}	B_{41}	B_{42}	B_{41}	B_{42}
B_{98}	B_{70}	B_{68}	C_{06}	B_{70}	B_{98}	B_{98}	C_{13}	B'_{01}	C_{20}	B'_{01}	B_{37}	B_{39}	B_{42}	B_{41}	B_{42}	B_{41}
B_{99}	B_{67}	B_{69}	C_{04}	B_{67}	B_{99}	B_{99}	C_{11}	B_{97}	C_{18}	B_{97}	B_{41}	B_{42}	B_{38}	B_{40}	B_{38}	B_{40}
B'_{01}	B_{68}	B_{70}	C_{06}	B_{68}	B'_{01}	B'_{01}	C_{13}	B_{98}	C_{20}	B_{98}	B_{42}	B_{41}	B_{37}	B_{39}	B_{37}	B_{39}
B'_{02}	B_{72}	B_{71}	C_{63}	B_{72}	B'_{02}	B'_{02}	C_{75}	B'_{03}	C_{81}	B'_{03}	B_{39}	B_{37}	B_{40}	B_{38}	B_{40}	B_{38}
B'_{03}	B_{71}	B_{72}	C_{63}	B_{71}	B'_{03}	B'_{03}	C_{75}	B'_{02}	C_{81}	B'_{02}	B_{40}	B_{38}	B_{39}	B_{37}	B_{39}	B_{37}
B'_{04}	B_{75}	B_{73}	C_{05}	B_{75}	B'_{04}	B'_{04}	C_{12}	B'_{06}	C_{19}	B'_{06}	B_{44}	B_{46}	B_{47}	B_{48}	B_{47}	B_{48}
B'_{05}	B_{76}	B_{74}	C_{06}	B_{76}	B'_{05}	B'_{05}	C_{13}	B'_{07}	C_{20}	B'_{07}	B_{43}	B_{45}	B_{48}	B_{47}	B_{48}	B_{47}
B'_{06}	B_{73}	B_{75}	C_{05}	B_{73}	B'_{06}	B'_{06}	C_{12}	B'_{04}	C_{19}	B'_{04}	B_{47}	B_{48}	B_{44}	B_{46}	B_{44}	B_{46}
B'_{07}	B_{74}	B_{76}	C_{06}	B_{74}	B'_{07}	B'_{07}	C_{13}	B'_{05}	C_{20}	B'_{05}	B_{48}	B_{47}	B_{43}	B_{45}	B_{43}	B_{45}
B'_{08}	B_{78}	B_{77}	C_{61}	B_{78}	B'_{08}	B'_{08}	C_{73}	B'_{09}	C_{79}	B'_{09}	B_{45}	B_{43}	B_{46}	B_{44}	B_{46}	B_{44}
B'_{09}	B_{77}	B_{78}	C_{61}	B_{77}	B'_{09}	B'_{09}	C_{73}	B'_{08}	C_{79}	B'_{08}	B_{46}	B_{44}	B_{45}	B_{43}	B_{45}	B_{43}
B'_{10}	C_{34}	C_{38}	C_{56}	C_{37}	C_{46}	C_{41}	C_{68}	C_{42}	C_{67}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{04}	C_{11}
B'_{11}	C_{33}	C_{37}	C_{56}	C_{38}	C_{45}	C_{42}	C_{68}	C_{41}	C_{67}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{01}	C_{02}
B'_{12}	C_{56}	C_{55}	C_{34}	C_{37}	C_{67}	C_{41}	C_{42}	C_{68}	C_{46}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{62}	C_{74}
B'_{13}	C_{56}	C_{55}	C_{33}	C_{38}	C_{67}	C_{42}	C_{41}	C_{68}	C_{45}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{62}	C_{74}
B'_{14}	C_{33}	C_{37}	C_{34}	C_{55}	C_{45}	C_{68}	C_{42}	C_{41}	C_{46}	C_{67}	C_{62}	C_{74}	C_{61}	C_{73}	C_{01}	C_{02}
B'_{15}	C_{34}	C_{38}	C_{33}	C_{55}	C_{46}	C_{68}	C_{41}	C_{42}	C_{45}	C_{67}	C_{62}	C_{74}	C_{61}	C_{73}	C_{04}	C_{11}
B'_{16}	C_{35}	C_{39}	C_{58}	C_{37}	C_{47}	C_{41}	C_{70}	C_{43}	C_{69}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{05}	C_{12}
B'_{17}	C_{33}	C_{37}	C_{58}	C_{39}	C_{45}	C_{43}	C_{70}	C_{41}	C_{69}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{01}	C_{02}
B'_{18}	C_{58}	C_{57}	C_{35}	C_{37}	C_{69}	C_{41}	C_{43}	C_{70}	C_{47}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{64}	C_{76}
B'_{19}	C_{58}	C_{57}	C_{33}	C_{39}	C_{69}	C_{43}	C_{41}	C_{70}	C_{45}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{64}	C_{76}
B'_{20}	C_{33}	C_{37}	C_{35}	C_{57}	C_{45}	C_{70}	C_{43}	C_{41}	C_{47}	C_{69}	C_{64}	C_{76}	C_{63}	C_{75}	C_{01}	C_{02}
B'_{21}	C_{35}	C_{39}	C_{33}	C_{57}	C_{47}	C_{70}	C_{41}	C_{43}	C_{45}	C_{69}	C_{64}	C_{76}	C_{63}	C_{75}	C_{05}	C_{12}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{97}	B_{38}	B_{40}	B_{40}	B_{42}	B_{38}	B_{41}	B_{37}	B_{39}	C_{26}	C_{30}	C_{15}	C_{08}	C_{06}	C_{28}	C_{13}	C_{32}
B_{98}	B_{37}	B_{39}	B_{39}	B_{41}	B_{37}	B_{42}	B_{38}	B_{40}	C_{28}	C_{32}	C_{17}	C_{10}	C_{04}	C_{26}	C_{11}	C_{30}
B_{99}	B_{41}	B_{42}	B_{42}	B_{40}	B_{41}	B_{38}	B_{39}	B_{37}	C_{26}	C_{30}	C_{15}	C_{08}	C_{63}	C_{51}	C_{75}	C_{52}
B'_{01}	B_{42}	B_{41}	B_{41}	B_{39}	B_{42}	B_{37}	B_{40}	B_{38}	C_{28}	C_{32}	C_{17}	C_{10}	C_{63}	C_{51}	C_{75}	C_{52}
B'_{02}	B_{39}	B_{37}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	C_{51}	C_{52}	C_{76}	C_{64}	C_{04}	C_{26}	C_{11}	C_{30}
B'_{03}	B_{40}	B_{38}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	C_{51}	C_{52}	C_{76}	C_{64}	C_{06}	C_{28}	C_{13}	C_{32}
B'_{04}	B_{44}	B_{46}	B_{46}	B_{48}	B_{44}	B_{47}	B_{43}	B_{45}	C_{27}	C_{31}	C_{16}	C_{09}	C_{06}	C_{28}	C_{13}	C_{32}
B'_{05}	B_{43}	B_{45}	B_{45}	B_{47}	B_{43}	B_{48}	B_{44}	B_{46}	C_{28}	C_{32}	C_{17}	C_{10}	C_{05}	C_{27}	C_{12}	C_{31}
B'_{06}	B_{47}	B_{48}	B_{48}	B_{46}	B_{47}	B_{44}	B_{45}	B_{43}	C_{27}	C_{31}	C_{16}	C_{09}	C_{61}	C_{49}	C_{73}	C_{50}
B'_{07}	B_{48}	B_{47}	B_{47}	B_{45}	B_{48}	B_{43}	B_{46}	B_{44}	C_{28}	C_{32}	C_{17}	C_{10}	C_{61}	C_{49}	C_{73}	C_{50}
B'_{08}	B_{45}	B_{43}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	C_{49}	C_{50}	C_{74}	C_{62}	C_{05}	C_{27}	C_{12}	C_{31}
B'_{09}	B_{46}	B_{44}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	C_{49}	C_{50}	C_{74}	C_{62}	C_{06}	C_{28}	C_{13}	C_{32}
B'_{10}	C_{08}	C_{15}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	C_{62}	C_{74}	C_{61}	C_{73}	B_{04}	B_{21}	B_{03}	B_{22}
B'_{11}	C_{07}	C_{14}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	C_{62}	C_{74}	C_{61}	C_{73}	B_{20}	B_{22}	B_{19}	B_{21}
B'_{12}	C_{61}	C_{73}	B_{04}	B_{21}	B_{03}	B_{22}	B_{19}	B_{20}	C_{04}	C_{11}	C_{08}	C_{15}	B_{03}	B_{19}	B_{04}	B_{20}
B'_{13}	C_{61}	C_{73}	B_{20}	B_{22}	B_{19}	B_{21}	B_{03}	B_{04}	C_{01}	C_{02}	C_{07}	C_{14}	B_{19}	B_{03}	B_{20}	B_{04}
B'_{14}	C_{07}	C_{14}	B_{21}	B_{04}	B_{22}	B_{03}	B_{20}	B_{19}	C_{04}	C_{11}	C_{08}	C_{15}	B_{22}	B_{20}	B_{21}	B_{19}
B'_{15}	C_{08}	C_{15}	B_{22}	B_{20}	B_{21}	B_{19}	B_{04}	B_{03}	C_{01}	C_{02}	C_{07}	C_{14}	B_{21}	B_{04}	B_{22}	B_{03}
B'_{16}	C_{09}	C_{16}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	C_{64}	C_{76}	C_{63}	C_{75}	B_{06}	B_{25}	B_{02}	B_{26}
B'_{17}	C_{07}	C_{14}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	C_{64}	C_{76}	C_{63}	C_{75}	B_{24}	B_{26}	B_{23}	B_{25}
B'_{18}	C_{63}	C_{75}	B_{06}	B_{25}	B_{02}	B_{26}	B_{23}	B_{24}	C_{05}	C_{12}	C_{09}	C_{16}	B_{02}	B_{23}	B_{06}	B_{24}
B'_{19}	C_{63}	C_{75}	B_{24}	B_{26}	B_{23}	B_{25}	B_{02}	B_{06}	C_{01}	C_{02}	C_{07}	C_{14}	B_{23}	B_{02}	B_{24}	B_{06}
B'_{20}	C_{07}	C_{14}	B_{25}	B_{06}	B_{26}	B_{02}	B_{24}	B_{23}	C_{05}	C_{12}	C_{09}	C_{16}	B_{26}	B_{24}	B_{25}	B_{23}
B'_{21}	C_{09}	C_{16}	B_{26}	B_{24}	B_{25}	B_{23}	B_{06}	B_{02}	C_{01}	C_{02}	C_{07}	C_{14}	B_{25}	B_{06}	B_{26}	B_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{97}	C_{17}	C_{10}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	B_{71}	B_{72}	B_{68}	B_{70}	B_{71}	B_{72}	B_{68}	B_{70}
B_{98}	C_{15}	C_{08}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	B_{72}	B_{71}	B_{67}	B_{69}	B_{72}	B_{71}	B_{67}	B_{69}
B_{99}	C_{76}	C_{64}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{68}	B_{70}	B_{71}	B_{72}	B_{68}	B_{70}	B_{71}	B_{72}
B'_{01}	C_{76}	C_{64}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{67}	B_{69}	B_{72}	B_{71}	B_{67}	B_{69}	B_{72}	B_{71}
B'_{02}	C_{15}	C_{08}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{70}	B_{68}	B_{69}	B_{67}	B_{70}	B_{68}	B_{69}	B_{67}
B'_{03}	C_{17}	C_{10}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	B_{69}	B_{67}	B_{70}	B_{68}	B_{69}	B_{67}	B_{70}	B_{68}
B'_{04}	C_{17}	C_{10}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	B_{77}	B_{78}	B_{74}	B_{76}	B_{77}	B_{78}	B_{74}	B_{76}
B'_{05}	C_{16}	C_{09}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	B_{78}	B_{77}	B_{73}	B_{75}	B_{78}	B_{77}	B_{73}	B_{75}
B'_{06}	C_{74}	C_{62}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{74}	B_{76}	B_{77}	B_{78}	B_{74}	B_{76}	B_{77}	B_{78}
B'_{07}	C_{74}	C_{62}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{73}	B_{75}	B_{78}	B_{77}	B_{73}	B_{75}	B_{78}	B_{77}
B'_{08}	C_{16}	C_{09}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	B_{76}	B_{74}	B_{75}	B_{73}	B_{76}	B_{74}	B_{75}	B_{73}
B'_{09}	C_{17}	C_{10}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	B_{75}	B_{73}	B_{76}	B_{74}	B_{75}	B_{73}	B_{76}	B_{74}
B'_{10}	B_{19}	B_{20}	B_{20}	B_{22}	B_{19}	B_{21}	B_{03}	B_{04}	C_{07}	C_{21}	C_{08}	C_{22}	C_{04}	C_{18}	C_{01}	C_{03}
B'_{11}	B_{03}	B_{04}	B_{04}	B_{21}	B_{03}	B_{22}	B_{19}	B_{20}	C_{08}	C_{22}	C_{07}	C_{21}	C_{01}	C_{03}	C_{04}	C_{18}
B'_{12}	B_{21}	B_{22}	B_{22}	B_{20}	B_{21}	B_{19}	B_{04}	B_{03}	C_{07}	C_{21}	C_{61}	C_{79}	C_{62}	C_{80}	C_{01}	C_{03}
B'_{13}	B_{22}	B_{21}	B_{21}	B_{04}	B_{22}	B_{03}	B_{20}	B_{19}	C_{08}	C_{22}	C_{61}	C_{79}	C_{62}	C_{80}	C_{04}	C_{18}
B'_{14}	B_{04}	B_{03}	B_{03}	B_{19}	B_{04}	B_{20}	B_{21}	B_{22}	C_{61}	C_{79}	C_{07}	C_{21}	C_{01}	C_{03}	C_{62}	C_{80}
B'_{15}	B_{20}	B_{19}	B_{19}	B_{03}	B_{20}	B_{04}	B_{22}	B_{21}	C_{61}	C_{79}	C_{08}	C_{22}	C_{04}	C_{18}	C_{62}	C_{80}
B'_{16}	B_{23}	B_{24}	B_{24}	B_{26}	B_{23}	B_{25}	B_{02}	B_{06}	C_{07}	C_{21}	C_{09}	C_{23}	C_{05}	C_{19}	C_{01}	C_{03}
B'_{17}	B_{02}	B_{06}	B_{06}	B_{25}	B_{02}	B_{26}	B_{23}	B_{24}	C_{09}	C_{23}	C_{07}	C_{21}	C_{01}	C_{03}	C_{05}	C_{19}
B'_{18}	B_{25}	B_{26}	B_{26}	B_{24}	B_{25}	B_{23}	B_{06}	B_{02}	C_{07}	C_{21}	C_{63}	C_{81}	C_{64}	C_{82}	C_{01}	C_{03}
B'_{19}	B_{26}	B_{25}	B_{25}	B_{06}	B_{26}	B_{02}	B_{24}	B_{23}	C_{09}	C_{23}	C_{63}	C_{81}	C_{64}	C_{82}	C_{05}	C_{19}
B'_{20}	B_{06}	B_{02}	B_{02}	B_{23}	B_{06}	B_{24}	B_{25}	B_{26}	C_{63}	C_{81}	C_{07}	C_{21}	C_{01}	C_{03}	C_{64}	C_{82}
B'_{21}	B_{24}	B_{23}	B_{23}	B_{02}	B_{24}	B_{06}	B_{26}	B_{25}	C_{63}	C_{81}	C_{09}	C_{23}	C_{05}	C_{19}	C_{64}	C_{82}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{97}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}	C_{34}	C_{38}	C_{22}	C_{08}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
B_{98}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}	C_{36}	C_{40}	C_{24}	C_{10}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{99}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}	C_{34}	C_{38}	C_{22}	C_{08}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}
B_{01}''	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}	C_{36}	C_{40}	C_{24}	C_{10}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}
B_{02}''	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	C_{57}	C_{58}	C_{82}	C_{64}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
B_{03}''	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	C_{57}	C_{58}	C_{82}	C_{64}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
B_{04}''	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}	C_{35}	C_{39}	C_{23}	C_{09}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
B_{05}''	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}	C_{36}	C_{40}	C_{24}	C_{10}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{06}''	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}	C_{35}	C_{39}	C_{23}	C_{09}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}
B_{07}''	B_{77}	B_{75}	B_{78}	B_{73}	B_{76}	B_{74}	C_{36}	C_{40}	C_{24}	C_{10}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}
B_{08}''	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	C_{55}	C_{56}	C_{80}	C_{62}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
B_{09}''	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	C_{55}	C_{56}	C_{80}	C_{62}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
B_{10}''	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	C_{62}	C_{80}	C_{61}	C_{79}	B_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}
B_{11}''	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	C_{62}	C_{80}	C_{61}	C_{79}	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}
B_{12}''	B_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}	C_{04}	C_{18}	C_{08}	C_{22}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}
B_{13}''	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}	C_{01}	C_{03}	C_{07}	C_{21}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}
B_{14}''	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}	C_{04}	C_{18}	C_{08}	C_{22}	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}
B_{15}''	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}	C_{01}	C_{03}	C_{07}	C_{21}	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}
B_{16}''	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	C_{64}	C_{82}	C_{63}	C_{81}	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}
B_{17}''	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	C_{64}	C_{82}	C_{63}	C_{81}	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}
B_{18}''	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}	C_{05}	C_{19}	C_{09}	C_{23}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}
B_{19}''	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}	C_{01}	C_{03}	C_{07}	C_{21}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}
B_{20}''	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}	C_{05}	C_{19}	C_{09}	C_{23}	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}
B_{21}''	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}	C_{01}	C_{03}	C_{07}	C_{21}	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B_{97}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B'_{02}	B'_{03}	B_{98}	B'_{01}	B'_{01}	B'_{03}
B_{98}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	B_{97}	B_{99}	B'_{03}	B'_{02}	B'_{03}	B'_{02}	B_{97}	B_{99}	B_{99}	B'_{02}
B_{99}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B'_{02}	B'_{03}	B_{98}	B'_{01}	B_{98}	B'_{01}	B'_{02}	B'_{03}	B'_{03}	B'_{01}
B'_{01}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B'_{03}	B'_{02}	B_{97}	B_{99}	B_{97}	B_{99}	B'_{03}	B'_{02}	B'_{02}	B_{99}
B'_{02}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B_{99}	B_{97}	B'_{01}	B_{98}	B'_{01}	B_{98}	B_{99}	B_{97}	B_{97}	B_{98}
B'_{03}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	B'_{01}	B_{98}	B_{99}	B_{97}	B_{99}	B_{97}	B'_{01}	B_{98}	B_{98}	B_{97}
B'_{04}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	B'_{05}	B'_{07}	B'_{08}	B'_{09}	B'_{08}	B'_{09}	B'_{05}	B'_{07}	B'_{07}	B'_{09}
B'_{05}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	B'_{06}	B'_{08}
B'_{06}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B'_{08}	B'_{09}	B'_{04}	B'_{07}	B'_{04}	B'_{07}	B'_{08}	B'_{09}	B'_{09}	B'_{07}
B'_{07}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B'_{09}	B'_{08}	B'_{04}	B'_{06}	B'_{04}	B'_{06}	B'_{09}	B'_{08}	B'_{08}	B'_{06}
B'_{08}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	B'_{04}	B'_{05}
B'_{09}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	B'_{07}	B'_{05}	B'_{06}	B'_{04}	B'_{06}	B'_{04}	B'_{07}	B'_{05}	B'_{05}	B'_{04}
B'_{10}	B_{56}	B_{50}	B_{55}	B_{49}	B_{08}	B_{12}	C_{02}	C_{03}	C_{14}	C_{21}	C_{11}	C_{18}	C_{15}	C_{22}	B_{14}	B_{79}
B'_{11}	B_{12}	B_{49}	B_{08}	B_{50}	B_{55}	B_{56}	C_{11}	C_{18}	C_{15}	C_{22}	C_{02}	C_{03}	C_{14}	C_{21}	B_{79}	B_{14}
B'_{12}	B_{50}	B_{56}	B_{49}	B_{55}	B_{12}	B_{08}	C_{02}	C_{03}	C_{14}	C_{21}	C_{74}	C_{80}	C_{73}	C_{79}	B_{18}	B_{81}
B'_{13}	B_{49}	B_{12}	B_{50}	B_{08}	B_{56}	B_{55}	C_{11}	C_{18}	C_{15}	C_{22}	C_{74}	C_{80}	C_{73}	C_{79}	B_{80}	B_{82}
B'_{14}	B_{08}	B_{55}	B_{12}	B_{56}	B_{49}	B_{50}	C_{74}	C_{80}	C_{73}	C_{79}	C_{02}	C_{03}	C_{14}	C_{21}	B_{81}	B_{18}
B'_{15}	B_{55}	B_{08}	B_{56}	B_{12}	B_{50}	B_{49}	C_{74}	C_{80}	C_{73}	C_{79}	C_{11}	C_{18}	C_{15}	C_{22}	B_{82}	B_{80}
B'_{16}	B_{54}	B_{52}	B_{53}	B_{51}	B_{09}	B_{10}	C_{02}	C_{03}	C_{14}	C_{21}	C_{12}	C_{19}	C_{16}	C_{23}	B_{16}	B_{83}
B'_{17}	B_{10}	B_{51}	B_{09}	B_{52}	B_{53}	B_{54}	C_{12}	C_{19}	C_{16}	C_{23}	C_{02}	C_{03}	C_{14}	C_{21}	B_{83}	B_{16}
B'_{18}	B_{52}	B_{54}	B_{51}	B_{53}	B_{10}	B_{09}	C_{02}	C_{03}	C_{14}	C_{21}	C_{76}	C_{82}	C_{75}	C_{81}	B_{13}	B_{85}
B'_{19}	B_{51}	B_{10}	B_{52}	B_{09}	B_{54}	B_{53}	C_{12}	C_{19}	C_{16}	C_{23}	C_{76}	C_{82}	C_{75}	C_{81}	B_{84}	B_{86}
B'_{20}	B_{09}	B_{53}	B_{10}	B_{54}	B_{51}	B_{52}	C_{76}	C_{82}	C_{75}	C_{81}	C_{02}	C_{03}	C_{14}	C_{21}	B_{85}	B_{13}
B'_{21}	B_{53}	B_{09}	B_{54}	B_{10}	B_{52}	B_{51}	C_{76}	C_{82}	C_{75}	C_{81}	C_{12}	C_{19}	C_{16}	C_{23}	B_{86}	B_{84}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B_{97}	B_{98}	B'_{02}	B_{97}	B_{99}	C_{42}	C_{46}	C_{22}	C_{15}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{75}	C_{69}
B_{98}	B_{97}	B'_{03}	B_{98}	B'_{01}	C_{44}	C_{48}	C_{24}	C_{17}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{75}	C_{69}
B_{99}	B'_{02}	B_{98}	B_{99}	B_{97}	C_{42}	C_{46}	C_{22}	C_{15}	C_{75}	C_{69}	C_{81}	C_{70}	C_{82}	C_{76}	C_{13}	C_{44}
B'_{01}	B'_{03}	B_{97}	B'_{01}	B_{98}	C_{44}	C_{48}	C_{24}	C_{17}	C_{75}	C_{69}	C_{81}	C_{70}	C_{82}	C_{76}	C_{11}	C_{42}
B'_{02}	B_{99}	B'_{01}	B'_{02}	B'_{03}	C_{69}	C_{70}	C_{82}	C_{76}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{13}	C_{44}
B'_{03}	B'_{01}	B_{99}	B'_{03}	B'_{02}	C_{69}	C_{70}	C_{82}	C_{76}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{11}	C_{42}
B'_{04}	B'_{05}	B'_{08}	B'_{04}	B'_{06}	C_{43}	C_{47}	C_{23}	C_{16}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{73}	C_{67}
B'_{05}	B'_{04}	B'_{09}	B'_{05}	B'_{07}	C_{44}	C_{48}	C_{24}	C_{17}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{73}	C_{67}
B'_{06}	B'_{08}	B'_{05}	B'_{06}	B'_{04}	C_{43}	C_{47}	C_{23}	C_{16}	C_{73}	C_{67}	C_{79}	C_{68}	C_{80}	C_{74}	C_{13}	C_{44}
B'_{07}	B'_{09}	B'_{04}	B'_{07}	B'_{05}	C_{44}	C_{48}	C_{24}	C_{17}	C_{73}	C_{67}	C_{79}	C_{68}	C_{80}	C_{74}	C_{12}	C_{43}
B'_{08}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	C_{67}	C_{68}	C_{80}	C_{74}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{13}	C_{44}
B'_{09}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	C_{67}	C_{68}	C_{80}	C_{74}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{12}	C_{43}
B'_{10}	B_{18}	B_{80}	B_{81}	B_{82}	C_{74}	C_{80}	C_{73}	C_{79}	B_{18}	B_{81}	B_{14}	B_{82}	B_{79}	B_{80}	B_{80}	B_{82}
B'_{11}	B_{80}	B_{18}	B_{82}	B_{81}	C_{74}	C_{80}	C_{73}	C_{79}	B_{80}	B_{82}	B_{79}	B_{81}	B_{14}	B_{18}	B_{18}	B_{81}
B'_{12}	B_{14}	B_{82}	B_{79}	B_{80}	C_{11}	C_{18}	C_{15}	C_{22}	B_{14}	B_{79}	B_{18}	B_{80}	B_{81}	B_{82}	B_{82}	B_{80}
B'_{13}	B_{79}	B_{81}	B_{14}	B_{18}	C_{02}	C_{03}	C_{14}	C_{21}	B_{79}	B_{14}	B_{80}	B_{18}	B_{82}	B_{81}	B_{81}	B_{18}
B'_{14}	B_{82}	B_{14}	B_{80}	B_{79}	C_{11}	C_{18}	C_{15}	C_{22}	B_{82}	B_{80}	B_{81}	B_{79}	B_{18}	B_{14}	B_{14}	B_{79}
B'_{15}	B_{83}	B_{79}	B_{18}	B_{14}	C_{02}	C_{03}	C_{14}	C_{21}	B_{83}	B_{18}	B_{82}	B_{14}	B_{80}	B_{79}	B_{79}	B_{14}
B'_{16}	B_{13}	B_{84}	B_{85}	B_{86}	C_{76}	C_{82}	C_{75}	C_{81}	B_{13}	B_{85}	B_{16}	B_{86}	B_{83}	B_{84}	B_{84}	B_{86}
B'_{17}	B_{84}	B_{13}	B_{86}	B_{85}	C_{76}	C_{82}	C_{75}	C_{81}	B_{84}	B_{86}	B_{83}	B_{85}	B_{16}	B_{13}	B_{13}	B_{85}
B'_{18}	B_{16}	B_{86}	B_{83}	B_{84}	C_{12}	C_{19}	C_{16}	C_{23}	B_{16}	B_{83}	B_{13}	B_{84}	B_{85}	B_{86}	B_{86}	B_{84}
B'_{19}	B_{83}	B_{85}	B_{16}	B_{13}	C_{02}	C_{03}	C_{14}	C_{21}	B_{83}	B_{16}	B_{84}	B_{13}	B_{86}	B_{85}	B_{85}	B_{13}
B'_{20}	B_{86}	B_{16}	B_{84}	B_{83}	C_{12}	C_{19}	C_{16}	C_{23}	B_{86}	B_{84}	B_{85}	B_{83}	B_{13}	B_{16}	B_{16}	B_{83}
B'_{21}	B_{85}	B_{83}	B_{13}	B_{16}	C_{02}	C_{03}	C_{14}	C_{21}	B_{85}	B_{13}	B_{86}	B_{16}	B_{84}	B_{83}	B_{83}	B_{16}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{06}'	B_{07}'	B_{08}'	B_{09}'	B_{10}'	B_{11}'	B_{12}'	B_{13}'	B_{14}'	B_{15}'	B_{16}'	B_{17}'	B_{18}'	B_{19}'	B_{20}'	B_{21}'
B_{97}	C_{81}	C_{70}	C_{82}	C_{76}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}
B_{98}	C_{81}	C_{70}	C_{82}	C_{76}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}
B_{99}	C_{20}	C_{48}	C_{24}	C_{17}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}
B_{01}'	C_{18}	C_{46}	C_{22}	C_{15}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}
B_{02}'	C_{20}	C_{48}	C_{24}	C_{17}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}
B_{03}'	C_{18}	C_{46}	C_{22}	C_{15}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}
B_{04}'	C_{79}	C_{68}	C_{80}	C_{74}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}
B_{05}'	C_{79}	C_{68}	C_{80}	C_{74}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}
B_{06}'	C_{20}	C_{48}	C_{24}	C_{17}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}
B_{07}'	C_{19}	C_{47}	C_{23}	C_{16}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}
B_{08}'	C_{20}	C_{48}	C_{24}	C_{17}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}
B_{09}'	C_{19}	C_{47}	C_{23}	C_{16}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}
B_{10}'	B_{79}	B_{81}	B_{14}	B_{18}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B_{11}'	B_{14}	B_{82}	B_{79}	B_{80}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B_{12}'	B_{81}	B_{79}	B_{18}	B_{14}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}
B_{13}'	B_{82}	B_{14}	B_{80}	B_{79}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}
B_{14}'	B_{18}	B_{80}	B_{81}	B_{82}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B_{15}'	B_{80}	B_{18}	B_{82}	B_{83}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B_{16}'	B_{83}	B_{85}	B_{16}	B_{13}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
B_{17}'	B_{16}	B_{86}	B_{83}	B_{84}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B_{18}'	B_{85}	B_{83}	B_{13}	B_{16}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}
B_{19}'	B_{86}	B_{16}	B_{84}	B_{83}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}
B_{20}'	B_{13}	B_{84}	B_{85}	B_{86}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B_{21}'	B_{84}	B_{13}	B_{86}	B_{85}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}
B_{97}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{36}	C_{28}	C_{44}	C_{32}
B_{98}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{34}	C_{26}	C_{42}	C_{30}
B_{99}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{57}	C_{51}	C_{69}	C_{52}
B_{01}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{57}	C_{51}	C_{69}	C_{52}
B_{02}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{34}	C_{26}	C_{42}	C_{30}
B_{03}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{36}	C_{28}	C_{44}	C_{32}
B_{04}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{36}	C_{28}	C_{44}	C_{32}
B_{05}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{35}	C_{27}	C_{43}	C_{31}
B_{06}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{55}	C_{49}	C_{67}	C_{50}
B_{07}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{55}	C_{49}	C_{67}	C_{50}
B_{08}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{35}	C_{27}	C_{43}	C_{31}
B_{09}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{36}	C_{28}	C_{44}	C_{32}
B_{10}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	B_{12}	B_{14}	B_{10}	B_{15}
B_{11}	B_{11}	B_{10}	B_{13}	B_{12}	B_{15}	B_{14}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	B_{13}	B_{15}	B_{11}	B_{14}
B_{12}	B_{12}	B_{14}	B_{10}	B_{15}	B_{11}	B_{13}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{10}	B_{11}	B_{12}	B_{13}
B_{13}	B_{13}	B_{15}	B_{11}	B_{14}	B_{10}	B_{12}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{11}	B_{10}	B_{13}	B_{12}
B_{14}	B_{14}	B_{12}	B_{15}	B_{10}	B_{13}	B_{11}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{15}	B_{13}	B_{14}	B_{11}
B_{15}	B_{15}	B_{13}	B_{14}	B_{11}	B_{12}	B_{10}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{14}	B_{12}	B_{15}	B_{10}
B_{16}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	B_{18}	B_{20}	B_{16}	B_{21}
B_{17}	B_{17}	B_{16}	B_{19}	B_{18}	B_{21}	B_{20}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	B_{19}	B_{21}	B_{17}	B_{20}
B_{18}	B_{18}	B_{20}	B_{16}	B_{21}	B_{17}	B_{19}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{16}	B_{17}	B_{18}	B_{19}
B_{19}	B_{19}	B_{21}	B_{17}	B_{20}	B_{16}	B_{18}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{17}	B_{16}	B_{19}	B_{18}
B_{20}	B_{20}	B_{18}	B_{21}	B_{16}	B_{19}	B_{17}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{21}	B_{19}	B_{20}	B_{17}
B_{21}	B_{21}	B_{19}	B_{20}	B_{17}	B_{18}	B_{16}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{20}	B_{18}	B_{21}	B_{16}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{97}	C_{48}	C_{40}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{04}	C_{11}	C_{18}	C_{06}	C_{63}	D_{01}	C_{08}	C_{10}
B_{98}	C_{46}	C_{38}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{06}	C_{13}	C_{20}	C_{04}	C_{63}	D_{01}	C_{10}	C_{08}
B_{99}	C_{70}	C_{58}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{04}	C_{11}	C_{18}	C_{63}	C_{06}	D_{01}	C_{08}	C_{64}
B_{01}	C_{70}	C_{58}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{06}	C_{13}	C_{20}	C_{63}	C_{04}	D_{01}	C_{10}	C_{64}
B_{02}	C_{46}	C_{38}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{63}	C_{75}	C_{81}	C_{04}	C_{06}	D_{01}	C_{64}	C_{08}
B_{03}	C_{48}	C_{40}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{63}	C_{75}	C_{81}	C_{06}	C_{04}	D_{01}	C_{64}	C_{10}
B_{04}	C_{48}	C_{40}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{05}	C_{12}	C_{19}	C_{06}	C_{61}	D_{01}	C_{09}	C_{10}
B_{05}	C_{47}	C_{39}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{06}	C_{13}	C_{20}	C_{05}	C_{61}	D_{01}	C_{10}	C_{09}
B_{06}	C_{66}	C_{56}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{05}	C_{12}	C_{19}	C_{61}	C_{06}	D_{01}	C_{09}	C_{62}
B_{07}	C_{68}	C_{56}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{06}	C_{13}	C_{20}	C_{61}	C_{05}	D_{01}	C_{10}	C_{62}
B_{08}	C_{47}	C_{39}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{61}	C_{73}	C_{79}	C_{05}	C_{06}	D_{01}	C_{62}	C_{09}
B_{09}	C_{48}	C_{40}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{61}	C_{73}	C_{79}	C_{06}	C_{05}	D_{01}	C_{62}	C_{10}
B'_{10}	B'_{11}	B'_{13}	B'_{13}	B'_{15}	B'_{11}	B'_{14}	B'_{10}	B'_{12}	D_{01}	D_{02}	D_{03}	C_{01}	C_{04}	C_{02}	D_{04}	C_{07}
B'_{11}	B'_{10}	B'_{12}	B'_{12}	B'_{14}	B'_{10}	B'_{15}	B'_{11}	B'_{13}	D_{01}	D_{02}	D_{03}	C_{04}	C_{01}	C_{62}	D_{04}	C_{08}
B'_{12}	B'_{14}	B'_{15}	B'_{15}	B'_{13}	B'_{14}	B'_{11}	B'_{12}	B'_{10}	D_{01}	D_{02}	D_{03}	C_{01}	C_{62}	C_{04}	D_{04}	C_{07}
B'_{13}	B'_{15}	B'_{14}	B'_{14}	B'_{12}	B'_{15}	B'_{10}	B'_{13}	B'_{11}	D_{01}	D_{02}	D_{03}	C_{04}	C_{62}	C_{01}	D_{04}	C_{08}
B'_{14}	B'_{12}	B'_{10}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	D_{01}	D_{02}	D_{03}	C_{62}	C_{01}	C_{04}	D_{04}	C_{61}
B'_{15}	B'_{13}	B'_{11}	B'_{11}	B'_{10}	B'_{13}	B'_{12}	B'_{15}	B'_{14}	D_{01}	D_{02}	D_{03}	C_{62}	C_{04}	C_{01}	D_{04}	C_{61}
B'_{16}	B'_{17}	B'_{19}	B'_{19}	B'_{21}	B'_{17}	B'_{20}	B'_{16}	B'_{18}	D_{01}	D_{02}	D_{03}	C_{01}	C_{05}	C_{64}	D_{04}	C_{07}
B'_{17}	B'_{16}	B'_{18}	B'_{18}	B'_{20}	B'_{16}	B'_{21}	B'_{17}	B'_{19}	D_{01}	D_{02}	D_{03}	C_{05}	C_{01}	C_{64}	D_{04}	C_{09}
B'_{18}	B'_{20}	B'_{21}	B'_{21}	B'_{19}	B'_{20}	B'_{17}	B'_{18}	B'_{16}	D_{01}	D_{02}	D_{03}	C_{01}	C_{64}	C_{05}	D_{04}	C_{07}
B'_{19}	B'_{21}	B'_{20}	B'_{20}	B'_{18}	B'_{21}	B'_{16}	B'_{19}	B'_{17}	D_{01}	D_{02}	D_{03}	C_{05}	C_{64}	C_{01}	D_{04}	C_{09}
B'_{20}	B'_{18}	B'_{16}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}	D_{01}	D_{02}	D_{03}	C_{64}	C_{01}	C_{05}	D_{04}	C_{63}
B'_{21}	B'_{19}	B'_{17}	B'_{17}	B'_{16}	B'_{19}	B'_{18}	B'_{21}	B'_{20}	D_{01}	D_{02}	D_{03}	C_{64}	C_{05}	C_{01}	D_{04}	C_{63}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
B_{97}	C_{64}	D_{04}	C_{13}	C_{75}	D_{02}	C_{15}	C_{17}	C_{76}	D_{04}	C_{20}	C_{81}	D_{03}	C_{22}	C_{24}	C_{82}	D_{04}
B_{98}	C_{64}	D_{04}	C_{11}	C_{75}	D_{02}	C_{17}	C_{15}	C_{76}	D_{04}	C_{18}	C_{81}	D_{03}	C_{24}	C_{22}	C_{82}	D_{04}
B_{99}	C_{10}	D_{04}	C_{75}	C_{13}	D_{02}	C_{15}	C_{76}	C_{17}	D_{04}	C_{81}	C_{20}	D_{03}	C_{22}	C_{82}	C_{24}	D_{04}
B'_{01}	C_{08}	D_{04}	C_{75}	C_{11}	D_{02}	C_{17}	C_{76}	C_{15}	D_{04}	C_{81}	C_{18}	D_{03}	C_{24}	C_{82}	C_{22}	D_{04}
B'_{02}	C_{10}	D_{04}	C_{11}	C_{13}	D_{02}	C_{76}	C_{15}	C_{17}	D_{04}	C_{18}	C_{20}	D_{03}	C_{82}	C_{22}	C_{24}	D_{04}
B'_{03}	C_{08}	D_{04}	C_{13}	C_{11}	D_{02}	C_{76}	C_{17}	C_{15}	D_{04}	C_{20}	C_{18}	D_{03}	C_{82}	C_{24}	C_{22}	D_{04}
B'_{04}	C_{62}	D_{04}	C_{13}	C_{73}	D_{02}	C_{16}	C_{17}	C_{74}	D_{04}	C_{20}	C_{79}	D_{03}	C_{23}	C_{24}	C_{80}	D_{04}
B'_{05}	C_{62}	D_{04}	C_{12}	C_{73}	D_{02}	C_{17}	C_{16}	C_{74}	D_{04}	C_{19}	C_{79}	D_{03}	C_{24}	C_{23}	C_{80}	D_{04}
B'_{06}	C_{10}	D_{04}	C_{73}	C_{13}	D_{02}	C_{16}	C_{74}	C_{17}	D_{04}	C_{79}	C_{20}	D_{03}	C_{23}	C_{70}	C_{24}	D_{04}
B'_{07}	C_{09}	D_{04}	C_{73}	C_{12}	D_{02}	C_{17}	C_{74}	C_{16}	D_{04}	C_{79}	C_{19}	D_{03}	C_{24}	C_{80}	C_{23}	D_{04}
B'_{08}	C_{10}	D_{04}	C_{12}	C_{13}	D_{02}	C_{74}	C_{16}	C_{17}	D_{04}	C_{19}	C_{20}	D_{03}	C_{80}	C_{23}	C_{24}	D_{04}
B'_{09}	C_{09}	D_{04}	C_{13}	C_{12}	D_{02}	C_{74}	C_{17}	C_{16}	D_{04}	C_{20}	C_{19}	D_{03}	C_{80}	C_{24}	C_{23}	D_{04}
B'_{10}	C_{08}	C_{61}	C_{02}	C_{11}	C_{74}	D_{04}	C_{14}	C_{15}	C_{73}	C_{03}	C_{18}	C_{80}	D_{04}	C_{21}	C_{22}	C_{79}
B'_{11}	C_{07}	C_{61}	C_{11}	C_{02}	C_{74}	D_{04}	C_{15}	C_{14}	C_{73}	C_{18}	C_{03}	C_{80}	D_{04}	C_{22}	C_{21}	C_{79}
B'_{12}	C_{61}	C_{08}	C_{02}	C_{74}	C_{11}	D_{04}	C_{14}	C_{73}	C_{15}	C_{03}	C_{80}	C_{18}	D_{04}	C_{21}	C_{79}	C_{22}
B'_{13}	C_{61}	C_{C7}	C_{11}	C_{74}	C_{02}	D_{04}	C_{15}	C_{73}	C_{14}	C_{18}	C_{80}	C_{03}	D_{04}	C_{22}	C_{79}	C_{21}
B'_{14}	C_{C7}	C_{08}	C_{74}	C_{02}	C_{11}	D_{04}	C_{73}	C_{14}	C_{15}	C_{80}	C_{03}	C_{18}	D_{04}	C_{79}	C_{21}	C_{22}
B'_{15}	C_{08}	C_{07}	C_{74}	C_{11}	C_{02}	D_{04}	C_{73}	C_{15}	C_{14}	C_{80}	C_{18}	C_{03}	D_{04}	C_{79}	C_{22}	C_{21}
B'_{16}	C_{09}	C_{63}	C_{02}	C_{12}	C_{76}	D_{04}	C_{14}	C_{16}	C_{75}	C_{03}	C_{19}	C_{82}	D_{04}	C_{21}	C_{23}	C_{81}
B'_{17}	C_{07}	C_{63}	C_{12}	C_{02}	C_{76}	D_{04}	C_{16}	C_{14}	C_{75}	C_{19}	C_{03}	C_{82}	D_{04}	C_{23}	C_{21}	C_{81}
B'_{18}	C_{63}	C_{09}	C_{02}	C_{76}	C_{12}	D_{04}	C_{14}	C_{75}	C_{16}	C_{03}	C_{82}	C_{19}	D_{04}	C_{21}	C_{81}	C_{23}
B'_{19}	C_{63}	C_{07}	C_{12}	C_{76}	C_{02}	D_{04}	C_{16}	C_{75}	C_{14}	C_{19}	C_{82}	C_{03}	D_{04}	C_{23}	C_{81}	C_{21}
B'_{20}	C_{07}	C_{09}	C_{76}	C_{02}	C_{12}	D_{04}	C_{75}	C_{14}	C_{16}	C_{82}	C_{03}	C_{19}	D_{04}	C_{81}	C_{21}	C_{23}
B'_{21}	C_{09}	C_{07}	C_{76}	C_{12}	C_{02}	D_{04}	C_{75}	C_{16}	C_{14}	C_{82}	C_{19}	C_{03}	D_{04}	C_{81}	C_{23}	C_{21}

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{41}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B_{97}	C_{26}	C_{28}	C_{51}	D_{01}	C_{30}	C_{32}	C_{52}	D_{02}	C_{34}	C_{36}	C_{57}	D_{01}	C_{38}	C_{40}	C_{58}	D_{03}
B_{98}	C_{28}	C_{26}	C_{51}	D_{01}	C_{32}	C_{30}	C_{52}	D_{02}	C_{36}	C_{34}	C_{57}	D_{01}	C_{40}	C_{38}	C_{58}	D_{03}
B_{99}	C_{26}	C_{51}	C_{28}	D_{01}	C_{30}	C_{52}	C_{32}	D_{02}	C_{34}	C_{57}	C_{36}	D_{01}	C_{38}	C_{58}	C_{40}	D_{03}
B_{100}	C_{28}	C_{51}	C_{26}	D_{01}	C_{32}	C_{52}	C_{30}	D_{02}	C_{36}	C_{57}	C_{34}	D_{01}	C_{40}	C_{58}	C_{38}	D_{03}
B_{101}	C_{51}	C_{26}	C_{28}	D_{01}	C_{52}	C_{30}	C_{32}	D_{02}	C_{57}	C_{34}	C_{36}	D_{01}	C_{58}	C_{38}	C_{40}	D_{03}
B_{102}	C_{51}	C_{28}	C_{26}	D_{01}	C_{52}	C_{32}	C_{30}	D_{02}	C_{57}	C_{36}	C_{34}	D_{01}	C_{58}	C_{40}	C_{38}	D_{03}
B_{103}	C_{27}	C_{28}	C_{49}	D_{01}	C_{31}	C_{32}	C_{50}	D_{02}	C_{35}	C_{36}	C_{55}	D_{01}	C_{39}	C_{40}	C_{56}	D_{03}
B_{104}	C_{28}	C_{27}	C_{49}	D_{01}	C_{32}	C_{31}	C_{50}	D_{02}	C_{36}	C_{35}	C_{55}	D_{01}	C_{40}	C_{39}	C_{56}	D_{03}
B_{105}	C_{27}	C_{49}	C_{28}	D_{01}	C_{31}	C_{50}	C_{32}	D_{02}	C_{35}	C_{55}	C_{36}	D_{01}	C_{39}	C_{56}	C_{40}	D_{03}
B_{106}	C_{28}	C_{49}	C_{27}	D_{01}	C_{32}	C_{50}	C_{31}	D_{02}	C_{36}	C_{55}	C_{35}	D_{01}	C_{40}	C_{56}	C_{39}	D_{03}
B_{107}	C_{49}	C_{27}	C_{28}	D_{01}	C_{50}	C_{31}	C_{32}	D_{02}	C_{55}	C_{35}	C_{36}	D_{01}	C_{56}	C_{39}	C_{40}	D_{03}
B_{108}	C_{49}	C_{28}	C_{27}	D_{01}	C_{50}	C_{32}	C_{31}	D_{02}	C_{55}	C_{36}	C_{35}	D_{01}	C_{56}	C_{40}	C_{39}	D_{03}
B_{109}	D_{01}	C_{25}	C_{26}	C_{50}	D_{02}	C_{29}	C_{30}	C_{49}	D_{01}	C_{33}	C_{34}	C_{56}	D_{03}	C_{37}	C_{38}	C_{55}
B_{110}	D_{01}	C_{26}	C_{25}	C_{50}	D_{02}	C_{30}	C_{29}	C_{49}	D_{01}	C_{34}	C_{33}	C_{56}	D_{03}	C_{38}	C_{37}	C_{55}
B_{111}	D_{01}	C_{25}	C_{50}	C_{26}	D_{02}	C_{29}	C_{49}	C_{30}	D_{01}	C_{33}	C_{56}	C_{34}	D_{03}	C_{37}	C_{55}	C_{38}
B_{112}	D_{01}	C_{26}	C_{50}	C_{25}	D_{02}	C_{30}	C_{49}	C_{29}	D_{01}	C_{34}	C_{56}	C_{33}	D_{03}	C_{38}	C_{55}	C_{37}
B_{113}	D_{01}	C_{50}	C_{25}	C_{26}	D_{02}	C_{49}	C_{29}	C_{30}	D_{01}	C_{56}	C_{33}	C_{34}	D_{03}	C_{55}	C_{37}	C_{38}
B_{114}	D_{01}	C_{50}	C_{26}	C_{25}	D_{02}	C_{49}	C_{30}	C_{29}	D_{01}	C_{56}	C_{34}	C_{33}	D_{03}	C_{55}	C_{38}	C_{37}
B_{115}	D_{01}	C_{25}	C_{27}	C_{52}	D_{02}	C_{29}	C_{31}	C_{51}	D_{01}	C_{33}	C_{35}	C_{58}	D_{03}	C_{37}	C_{39}	C_{57}
B_{116}	D_{01}	C_{27}	C_{25}	C_{52}	D_{02}	C_{31}	C_{29}	C_{51}	D_{01}	C_{35}	C_{33}	C_{58}	D_{03}	C_{39}	C_{37}	C_{57}
B_{117}	D_{01}	C_{25}	C_{52}	C_{27}	D_{02}	C_{29}	C_{51}	C_{31}	D_{01}	C_{33}	C_{58}	C_{35}	D_{03}	C_{37}	C_{57}	C_{39}
B_{118}	D_{01}	C_{27}	C_{52}	C_{25}	D_{02}	C_{31}	C_{51}	C_{29}	D_{01}	C_{35}	C_{58}	C_{33}	D_{03}	C_{39}	C_{57}	C_{37}
B_{119}	D_{01}	C_{52}	C_{25}	C_{27}	D_{02}	C_{51}	C_{29}	C_{31}	D_{01}	C_{58}	C_{33}	C_{35}	D_{03}	C_{57}	C_{37}	C_{39}
B_{120}	D_{01}	C_{52}	C_{27}	C_{25}	D_{02}	C_{51}	C_{31}	C_{29}	D_{01}	C_{58}	C_{35}	C_{33}	D_{03}	C_{57}	C_{39}	C_{37}

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
B_{97}	C_{42}	C_{44}	C_{69}	D_{02}	C_{46}	C_{48}	C_{70}	D_{03}	C_{52}	C_{51}	C_{32}	C_{28}	C_{30}	C_{26}	C_{58}	C_{57}
B_{98}	C_{44}	C_{42}	C_{69}	D_{02}	C_{48}	C_{46}	C_{70}	D_{03}	C_{52}	C_{51}	C_{30}	C_{26}	C_{32}	C_{28}	C_{58}	C_{57}
B_{99}	C_{42}	C_{69}	C_{44}	D_{02}	C_{46}	C_{70}	C_{48}	D_{03}	C_{32}	C_{28}	C_{52}	C_{51}	C_{30}	C_{26}	C_{40}	C_{36}
B'_{01}	C_{44}	C_{69}	C_{42}	D_{02}	C_{48}	C_{70}	C_{46}	D_{03}	C_{30}	C_{26}	C_{52}	C_{51}	C_{32}	C_{28}	C_{38}	C_{34}
B'_{02}	C_{69}	C_{42}	C_{44}	D_{02}	C_{70}	C_{46}	C_{48}	D_{03}	C_{32}	C_{28}	C_{30}	C_{26}	C_{52}	C_{51}	C_{40}	C_{36}
B'_{03}	C_{69}	C_{44}	C_{42}	D_{02}	C_{70}	C_{48}	C_{46}	D_{03}	C_{30}	C_{26}	C_{32}	C_{28}	C_{52}	C_{51}	C_{38}	C_{34}
B'_{04}	C_{43}	C_{44}	C_{67}	D_{02}	C_{47}	C_{48}	C_{68}	D_{03}	C_{50}	C_{49}	C_{32}	C_{28}	C_{31}	C_{27}	C_{56}	C_{55}
B'_{05}	C_{44}	C_{43}	C_{67}	D_{02}	C_{48}	C_{47}	C_{68}	D_{03}	C_{50}	C_{49}	C_{31}	C_{27}	C_{32}	C_{28}	C_{56}	C_{55}
B'_{06}	C_{43}	C_{67}	C_{44}	D_{02}	C_{47}	C_{68}	C_{48}	D_{03}	C_{32}	C_{28}	C_{50}	C_{49}	C_{31}	C_{27}	C_{40}	C_{36}
B'_{07}	C_{44}	C_{67}	C_{43}	D_{02}	C_{48}	C_{68}	C_{47}	D_{03}	C_{31}	C_{27}	C_{50}	C_{49}	C_{32}	C_{28}	C_{39}	C_{35}
B'_{08}	C_{67}	C_{43}	C_{44}	D_{02}	C_{68}	C_{47}	C_{48}	D_{03}	C_{32}	C_{28}	C_{31}	C_{27}	C_{50}	C_{49}	C_{40}	C_{36}
B'_{09}	C_{67}	C_{44}	C_{43}	D_{02}	C_{68}	C_{48}	C_{47}	D_{03}	C_{31}	C_{27}	C_{32}	C_{28}	C_{50}	C_{49}	C_{39}	C_{35}
B'_{10}	D_{02}	C_{41}	C_{42}	C_{68}	D_{03}	C_{45}	C_{46}	C_{67}	C_{25}	C_{29}	C_{26}	C_{30}	C_{49}	C_{50}	C_{33}	C_{37}
B'_{11}	D_{02}	C_{42}	C_{41}	C_{68}	D_{03}	C_{46}	C_{45}	C_{67}	C_{26}	C_{30}	C_{25}	C_{29}	C_{49}	C_{50}	C_{34}	C_{38}
B'_{12}	D_{02}	C_{41}	C_{68}	C_{42}	D_{03}	C_{45}	C_{67}	C_{46}	C_{25}	C_{29}	C_{50}	C_{49}	C_{30}	C_{26}	C_{33}	C_{37}
B'_{13}	D_{02}	C_{42}	C_{68}	C_{41}	D_{03}	C_{46}	C_{67}	C_{45}	C_{26}	C_{30}	C_{50}	C_{49}	C_{29}	C_{25}	C_{34}	C_{38}
B'_{14}	D_{02}	C_{68}	C_{41}	C_{42}	D_{03}	C_{67}	C_{45}	C_{46}	C_{50}	C_{49}	C_{25}	C_{29}	C_{30}	C_{26}	C_{56}	C_{55}
B'_{15}	D_{02}	C_{68}	C_{42}	C_{41}	D_{03}	C_{67}	C_{46}	C_{45}	C_{50}	C_{49}	C_{26}	C_{30}	C_{29}	C_{25}	C_{56}	C_{55}
B'_{16}	D_{02}	C_{41}	C_{43}	C_{70}	D_{03}	C_{45}	C_{47}	C_{69}	C_{25}	C_{29}	C_{27}	C_{31}	C_{51}	C_{52}	C_{33}	C_{37}
B'_{17}	D_{02}	C_{43}	C_{41}	C_{70}	D_{03}	C_{47}	C_{45}	C_{69}	C_{27}	C_{31}	C_{25}	C_{29}	C_{51}	C_{52}	C_{35}	C_{39}
B'_{18}	D_{02}	C_{41}	C_{70}	C_{43}	D_{03}	C_{45}	C_{69}	C_{47}	C_{25}	C_{29}	C_{52}	C_{51}	C_{31}	C_{27}	C_{33}	C_{37}
B'_{19}	D_{02}	C_{43}	C_{70}	C_{41}	D_{03}	C_{47}	C_{69}	C_{45}	C_{27}	C_{31}	C_{52}	C_{51}	C_{29}	C_{25}	C_{35}	C_{39}
B'_{20}	D_{02}	C_{70}	C_{41}	C_{43}	D_{03}	C_{69}	C_{45}	C_{47}	C_{52}	C_{51}	C_{25}	C_{29}	C_{31}	C_{27}	C_{58}	C_{57}
B'_{21}	D_{02}	C_{70}	C_{43}	C_{41}	D_{03}	C_{69}	C_{47}	C_{45}	C_{52}	C_{51}	C_{27}	C_{31}	C_{29}	C_{25}	C_{58}	C_{57}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
B_{97}	c_{40}	c_{36}	c_{38}	c_{34}	c_{64}	c_{63}	c_{10}	c_{06}	c_{08}	c_{04}	c_{70}	c_{69}	c_{48}	c_{44}	c_{46}	c_{42}
B_{98}	c_{38}	c_{34}	c_{40}	c_{36}	c_{64}	c_{63}	c_{08}	c_{04}	c_{10}	c_{06}	c_{70}	c_{69}	c_{46}	c_{42}	c_{48}	c_{44}
B_{99}	c_{58}	c_{57}	c_{38}	c_{34}	c_{10}	c_{06}	c_{64}	c_{63}	c_{08}	c_{04}	c_{48}	c_{44}	c_{70}	c_{69}	c_{46}	c_{42}
B'_{01}	c_{58}	c_{57}	c_{40}	c_{36}	c_{08}	c_{04}	c_{64}	c_{63}	c_{10}	c_{06}	c_{46}	c_{42}	c_{70}	c_{69}	c_{48}	c_{44}
B'_{02}	c_{38}	c_{34}	c_{58}	c_{57}	c_{10}	c_{06}	c_{08}	c_{04}	c_{64}	c_{63}	c_{48}	c_{44}	c_{46}	c_{42}	c_{70}	c_{69}
B'_{03}	c_{40}	c_{36}	c_{58}	c_{57}	c_{08}	c_{04}	c_{10}	c_{06}	c_{64}	c_{63}	c_{46}	c_{42}	c_{48}	c_{44}	c_{70}	c_{69}
B'_{04}	c_{40}	c_{36}	c_{39}	c_{35}	c_{62}	c_{61}	c_{10}	c_{06}	c_{09}	c_{05}	c_{68}	c_{67}	c_{48}	c_{44}	c_{47}	c_{43}
B'_{05}	c_{39}	c_{35}	c_{40}	c_{36}	c_{62}	c_{61}	c_{09}	c_{05}	c_{10}	c_{06}	c_{68}	c_{67}	c_{47}	c_{43}	c_{48}	c_{44}
B'_{06}	c_{56}	c_{55}	c_{39}	c_{35}	c_{10}	c_{06}	c_{62}	c_{61}	c_{09}	c_{05}	c_{48}	c_{44}	c_{68}	c_{67}	c_{47}	c_{43}
B'_{07}	c_{56}	c_{55}	c_{40}	c_{36}	c_{09}	c_{05}	c_{62}	c_{61}	c_{10}	c_{06}	c_{47}	c_{43}	c_{68}	c_{67}	c_{48}	c_{44}
B'_{08}	c_{39}	c_{35}	c_{56}	c_{55}	c_{10}	c_{06}	c_{09}	c_{05}	c_{62}	c_{61}	c_{48}	c_{44}	c_{47}	c_{43}	c_{68}	c_{67}
B'_{09}	c_{40}	c_{36}	c_{56}	c_{55}	c_{09}	c_{05}	c_{10}	c_{06}	c_{62}	c_{61}	c_{47}	c_{43}	c_{48}	c_{44}	c_{68}	c_{67}
B'_{10}	c_{34}	c_{38}	c_{55}	c_{56}	c_{01}	c_{07}	c_{04}	c_{08}	c_{61}	c_{62}	c_{41}	c_{45}	c_{42}	c_{46}	c_{67}	c_{68}
B'_{11}	c_{33}	c_{37}	c_{55}	c_{56}	c_{04}	c_{08}	c_{01}	c_{07}	c_{61}	c_{62}	c_{42}	c_{46}	c_{41}	c_{45}	c_{67}	c_{68}
B'_{12}	c_{56}	c_{55}	c_{38}	c_{34}	c_{01}	c_{07}	c_{62}	c_{61}	c_{08}	c_{04}	c_{41}	c_{45}	c_{68}	c_{67}	c_{46}	c_{42}
B'_{13}	c_{56}	c_{55}	c_{37}	c_{33}	c_{04}	c_{08}	c_{62}	c_{61}	c_{07}	c_{01}	c_{42}	c_{46}	c_{68}	c_{67}	c_{45}	c_{41}
B'_{14}	c_{33}	c_{37}	c_{38}	c_{34}	c_{62}	c_{61}	c_{01}	c_{07}	c_{08}	c_{04}	c_{68}	c_{67}	c_{41}	c_{45}	c_{46}	c_{42}
B'_{15}	c_{34}	c_{38}	c_{37}	c_{33}	c_{62}	c_{61}	c_{04}	c_{08}	c_{07}	c_{01}	c_{68}	c_{67}	c_{42}	c_{46}	c_{45}	c_{41}
B'_{16}	c_{35}	c_{39}	c_{57}	c_{58}	c_{01}	c_{07}	c_{05}	c_{09}	c_{63}	c_{64}	c_{41}	c_{45}	c_{43}	c_{47}	c_{69}	c_{70}
B'_{17}	c_{33}	c_{37}	c_{57}	c_{58}	c_{05}	c_{09}	c_{01}	c_{07}	c_{63}	c_{64}	c_{43}	c_{47}	c_{41}	c_{45}	c_{69}	c_{70}
B'_{18}	c_{58}	c_{57}	c_{39}	c_{35}	c_{01}	c_{07}	c_{64}	c_{63}	c_{09}	c_{05}	c_{41}	c_{45}	c_{70}	c_{69}	c_{47}	c_{43}
B'_{19}	c_{58}	c_{57}	c_{37}	c_{33}	c_{05}	c_{09}	c_{64}	c_{63}	c_{07}	c_{01}	c_{43}	c_{47}	c_{70}	c_{69}	c_{45}	c_{41}
B'_{20}	c_{33}	c_{37}	c_{39}	c_{35}	c_{64}	c_{63}	c_{01}	c_{07}	c_{09}	c_{05}	c_{70}	c_{69}	c_{41}	c_{45}	c_{47}	c_{43}
B'_{21}	c_{35}	c_{39}	c_{37}	c_{33}	c_{64}	c_{63}	c_{05}	c_{09}	c_{07}	c_{01}	c_{70}	c_{69}	c_{43}	c_{47}	c_{45}	c_{41}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{73}	c_{74}	c_{75}	c_{76}	c_{77}	c_{78}	c_{79}	c_{80}	c_{81}	c_{82}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B_{97}	c_{76}	c_{75}	c_{17}	c_{13}	c_{15}	c_{11}	c_{82}	c_{81}	c_{24}	c_{20}	c_{22}	c_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B_{98}	c_{76}	c_{75}	c_{15}	c_{11}	c_{17}	c_{13}	c_{82}	c_{81}	c_{22}	c_{18}	c_{24}	c_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B_{99}	c_{17}	c_{13}	c_{76}	c_{75}	c_{15}	c_{11}	c_{24}	c_{20}	c_{82}	c_{81}	c_{22}	c_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{01}	c_{15}	c_{11}	c_{76}	c_{75}	c_{17}	c_{13}	c_{22}	c_{18}	c_{82}	c_{81}	c_{24}	c_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{02}	c_{17}	c_{13}	c_{15}	c_{11}	c_{76}	c_{75}	c_{24}	c_{20}	c_{22}	c_{18}	c_{82}	c_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{03}	c_{15}	c_{11}	c_{17}	c_{13}	c_{76}	c_{75}	c_{22}	c_{18}	c_{24}	c_{20}	c_{82}	c_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{04}	c_{74}	c_{73}	c_{17}	c_{13}	c_{16}	c_{12}	c_{80}	c_{79}	c_{24}	c_{20}	c_{23}	c_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{05}	c_{74}	c_{73}	c_{16}	c_{12}	c_{17}	c_{13}	c_{80}	c_{79}	c_{23}	c_{19}	c_{24}	c_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{06}	c_{17}	c_{13}	c_{74}	c_{73}	c_{16}	c_{12}	c_{24}	c_{20}	c_{80}	c_{79}	c_{23}	c_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{07}	c_{16}	c_{12}	c_{74}	c_{73}	c_{17}	c_{13}	c_{23}	c_{19}	c_{80}	c_{79}	c_{24}	c_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{08}	c_{17}	c_{13}	c_{16}	c_{12}	c_{74}	c_{73}	c_{24}	c_{20}	c_{23}	c_{19}	c_{80}	c_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{09}	c_{16}	c_{12}	c_{17}	c_{13}	c_{74}	c_{73}	c_{23}	c_{19}	c_{24}	c_{20}	c_{80}	c_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{10}	c_{02}	c_{14}	c_{11}	c_{15}	c_{73}	c_{74}	c_{03}	c_{21}	c_{18}	c_{22}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{11}	c_{11}	c_{15}	c_{02}	c_{14}	c_{73}	c_{74}	c_{18}	c_{22}	c_{03}	c_{21}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{12}	c_{02}	c_{14}	c_{74}	c_{73}	c_{15}	c_{11}	c_{03}	c_{21}	c_{80}	c_{79}	c_{22}	c_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{13}	c_{11}	c_{15}	c_{74}	c_{73}	c_{14}	c_{02}	c_{18}	c_{22}	c_{80}	c_{79}	c_{21}	c_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{14}	c_{74}	c_{73}	c_{02}	c_{14}	c_{15}	c_{11}	c_{80}	c_{79}	c_{03}	c_{21}	c_{22}	c_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{15}	c_{74}	c_{73}	c_{11}	c_{15}	c_{14}	c_{02}	c_{80}	c_{79}	c_{18}	c_{22}	c_{21}	c_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{16}	c_{02}	c_{14}	c_{12}	c_{16}	c_{75}	c_{76}	c_{03}	c_{21}	c_{19}	c_{23}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{17}	c_{12}	c_{16}	c_{02}	c_{14}	c_{75}	c_{76}	c_{19}	c_{23}	c_{03}	c_{21}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{18}	c_{02}	c_{14}	c_{76}	c_{75}	c_{16}	c_{12}	c_{03}	c_{21}	c_{82}	c_{81}	c_{23}	c_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{19}	c_{12}	c_{16}	c_{76}	c_{75}	c_{14}	c_{02}	c_{19}	c_{23}	c_{82}	c_{81}	c_{21}	c_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{20}	c_{76}	c_{75}	c_{02}	c_{14}	c_{16}	c_{12}	c_{82}	c_{81}	c_{03}	c_{21}	c_{23}	c_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{21}	c_{76}	c_{75}	c_{12}	c_{16}	c_{14}	c_{02}	c_{82}	c_{81}	c_{19}	c_{23}	c_{21}	c_{03}	D_{01}	D_{02}	D_{03}	D_{04}

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
B_{22}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	B_{27}	B_{28}	B_{57}	B_{58}	B_{29}	B_{30}	B_{87}	B_{88}	B_{59}	B_{60}
B_{23}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	B_{28}	B_{27}	B_{58}	B_{57}	B_{30}	B_{29}	B_{88}	B_{87}	B_{60}	B_{59}
B_{24}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}	B_{29}	B_{31}	B_{59}	B_{61}	B_{27}	B_{32}	B_{89}	B_{91}	B_{57}	B_{62}
B_{25}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}	B_{30}	B_{32}	B_{60}	B_{62}	B_{28}	B_{31}	B_{90}	B_{92}	B_{58}	B_{61}
B_{26}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}	B_{31}	B_{29}	B_{61}	B_{59}	B_{32}	B_{27}	B_{91}	B_{89}	B_{62}	B_{57}
B_{27}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}	B_{32}	B_{30}	B_{62}	B_{60}	B_{31}	B_{28}	B_{92}	B_{90}	B_{61}	B_{58}
B_{28}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{05}	B_{33}	B_{11}	B_{63}	B_{01}	B_{34}	B_{15}	B_{93}	B_{07}	B_{64}
B_{29}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	B_{33}	B_{05}	B_{63}	B_{11}	B_{34}	B_{01}	B_{93}	B_{15}	B_{64}	B_{07}
B_{30}	B_{30}	B_{32}	B_{28}	B_{33}	B_{29}	B_{31}	B_{01}	B_{35}	B_{07}	B_{65}	B_{05}	B_{36}	B_{17}	B_{95}	B_{11}	B_{66}
B_{31}	B_{31}	B_{33}	B_{29}	B_{32}	B_{28}	B_{30}	B_{34}	B_{36}	B_{64}	B_{66}	B_{33}	B_{35}	B_{94}	B_{96}	B_{63}	B_{65}
B_{32}	B_{32}	B_{30}	B_{33}	B_{28}	B_{31}	B_{29}	B_{35}	B_{01}	B_{65}	B_{07}	B_{36}	B_{05}	B_{95}	B_{17}	B_{66}	B_{11}
B_{33}	B_{33}	B_{31}	B_{32}	B_{29}	B_{30}	B_{28}	B_{36}	B_{34}	B_{66}	B_{64}	B_{35}	B_{33}	B_{96}	B_{94}	B_{65}	B_{63}
B_{34}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{37}	B_{38}	B_{67}	B_{68}	B_{39}	B_{40}	B_{97}	B_{98}	B_{69}	B_{70}
B_{35}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	B_{38}	B_{37}	B_{68}	B_{67}	B_{40}	B_{39}	B_{98}	B_{97}	B_{70}	B_{69}
B_{36}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}	B_{39}	B_{41}	B_{69}	B_{71}	B_{37}	B_{42}	B_{99}	B_{02}	B_{67}	B_{72}
B_{37}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}	B_{40}	B_{42}	B_{70}	B_{72}	B_{38}	B_{41}	B_{01}	B_{03}	B_{68}	B_{71}
B_{38}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}	B_{41}	B_{39}	B_{71}	B_{69}	B_{42}	B_{37}	B_{02}	B_{99}	B_{72}	B_{67}
B_{39}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}	B_{42}	B_{40}	B_{72}	B_{70}	B_{41}	B_{38}	B_{03}	B_{01}	B_{71}	B_{68}
B_{40}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{43}	B_{44}	B_{73}	B_{74}	B_{45}	B_{46}	B_{04}	B_{05}	B_{75}	B_{76}
B_{41}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	B_{44}	B_{43}	B_{74}	B_{73}	B_{46}	B_{45}	B_{05}	B_{04}	B_{76}	B_{75}
B_{42}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	B_{45}	B_{47}	B_{75}	B_{77}	B_{43}	B_{48}	B_{06}	B_{08}	B_{73}	B_{78}
B_{43}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	B_{46}	B_{48}	B_{76}	B_{78}	B_{44}	B_{47}	B_{07}	B_{09}	B_{74}	B_{77}
B_{44}	B_{44}	B_{42}	B_{45}	B_{46}	B_{43}	B_{41}	B_{47}	B_{45}	B_{77}	B_{75}	B_{48}	B_{43}	B_{08}	B_{06}	B_{78}	B_{73}
B_{45}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	B_{48}	B_{46}	B_{78}	B_{76}	B_{47}	B_{44}	B_{09}	B_{07}	B_{77}	B_{74}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
B'_{22}	B_{89}	B_{90}	B_{31}	B_{61}	B_{32}	B_{62}	B_{91}	B_{92}	C_{53}	C_{27}	C_{26}	C_{30}	C_{54}	C_{31}	C_{59}	C_{34}
B'_{23}	B_{90}	B_{89}	B_{32}	B_{62}	B_{31}	B_{61}	B_{92}	B_{91}	C_{53}	C_{26}	C_{27}	C_{31}	C_{54}	C_{30}	C_{59}	C_{35}
B'_{24}	B_{87}	B_{92}	B_{28}	B_{58}	B_{30}	B_{60}	B_{88}	B_{90}	C_{31}	C_{54}	C_{26}	C_{30}	C_{27}	C_{53}	C_{39}	C_{34}
B'_{25}	B_{88}	B_{91}	B_{27}	B_{57}	B_{29}	B_{59}	B_{87}	B_{89}	C_{30}	C_{54}	C_{27}	C_{31}	C_{26}	C_{53}	C_{38}	C_{35}
B'_{26}	B_{92}	B_{87}	B_{30}	B_{60}	B_{28}	B_{58}	B_{90}	B_{88}	C_{31}	C_{26}	C_{54}	C_{53}	C_{27}	C_{30}	C_{39}	C_{60}
B'_{27}	B_{91}	B_{88}	B_{29}	B_{59}	B_{27}	B_{57}	B_{89}	B_{87}	C_{30}	C_{27}	C_{54}	C_{53}	C_{26}	C_{31}	C_{38}	C_{60}
B'_{28}	B_{17}	B_{94}	B_{35}	B_{65}	B_{36}	B_{66}	B_{95}	B_{96}	C_{54}	C_{28}	C_{25}	C_{29}	C_{53}	C_{32}	C_{60}	C_{33}
B'_{29}	B_{94}	B_{17}	B_{36}	B_{66}	B_{35}	B_{65}	B_{96}	B_{95}	C_{54}	C_{25}	C_{28}	C_{32}	C_{53}	C_{29}	C_{60}	C_{36}
B'_{30}	B_{15}	B_{96}	B_{33}	B_{63}	B_{34}	B_{64}	B_{93}	B_{94}	C_{32}	C_{53}	C_{25}	C_{29}	C_{28}	C_{54}	C_{40}	C_{33}
B'_{31}	B_{93}	B_{95}	B_{05}	B_{11}	B_{01}	B_{07}	B_{15}	B_{17}	C_{29}	C_{53}	C_{28}	C_{32}	C_{25}	C_{54}	C_{37}	C_{36}
B'_{32}	B_{96}	B_{15}	B_{34}	B_{64}	B_{33}	B_{63}	B_{94}	B_{93}	C_{32}	C_{25}	C_{53}	C_{54}	C_{28}	C_{29}	C_{40}	C_{59}
B'_{33}	B_{95}	B_{93}	B_{01}	B_{07}	B_{05}	B_{11}	B_{17}	B_{15}	C_{29}	C_{28}	C_{53}	C_{54}	C_{25}	C_{32}	C_{37}	C_{59}
B'_{34}	B_{99}	B'_{01}	B_{41}	B_{71}	B_{42}	B_{72}	B'_{02}	B'_{03}	C_{52}	C_{28}	C_{26}	C_{30}	C_{51}	C_{32}	C_{58}	C_{34}
B'_{35}	B'_{01}	B_{99}	B_{42}	B_{72}	B_{41}	B_{71}	B'_{03}	B'_{02}	C_{52}	C_{26}	C_{28}	C_{32}	C_{51}	C_{30}	C_{58}	C_{36}
B'_{36}	B_{97}	B'_{03}	B_{38}	B_{68}	B_{40}	B_{70}	B_{98}	B'_{01}	C_{32}	C_{51}	C_{26}	C_{30}	C_{28}	C_{52}	C_{40}	C_{34}
B'_{37}	B_{98}	B'_{02}	B_{37}	B_{67}	B_{39}	B_{69}	B_{97}	B_{99}	C_{30}	C_{51}	C_{28}	C_{32}	C_{26}	C_{52}	C_{38}	C_{36}
B'_{38}	B'_{03}	B_{97}	B_{40}	B_{70}	B_{38}	B_{68}	B'_{01}	B_{98}	C_{32}	C_{26}	C_{51}	C_{52}	C_{28}	C_{30}	C_{40}	C_{57}
B'_{39}	B'_{02}	B_{98}	B_{39}	B_{69}	B_{37}	B_{67}	B_{99}	B_{97}	C_{30}	C_{28}	C_{51}	C_{52}	C_{26}	C_{32}	C_{38}	C_{57}
B'_{40}	B'_{06}	B'_{07}	B_{47}	B_{77}	B_{48}	B_{78}	B'_{08}	B'_{09}	C_{50}	C_{28}	C_{27}	C_{31}	C_{49}	C_{32}	C_{56}	C_{35}
B'_{41}	B'_{07}	B'_{06}	B_{48}	B_{78}	B_{47}	B_{77}	B'_{09}	B'_{08}	C_{50}	C_{27}	C_{28}	C_{32}	C_{49}	C_{31}	C_{56}	C_{36}
B'_{42}	B'_{04}	B'_{09}	B_{44}	B_{74}	B_{46}	B_{76}	B'_{05}	B'_{07}	C_{32}	C_{49}	C_{27}	C_{31}	C_{28}	C_{50}	C_{40}	C_{35}
B'_{43}	B'_{05}	B'_{08}	B_{43}	B_{73}	B_{45}	B_{75}	B'_{04}	B'_{06}	C_{31}	C_{49}	C_{28}	C_{32}	C_{27}	C_{50}	C_{39}	C_{36}
B'_{44}	B'_{09}	B'_{04}	B_{46}	B_{76}	B_{44}	B_{74}	B'_{07}	B'_{05}	C_{32}	C_{27}	C_{49}	C_{50}	C_{28}	C_{31}	C_{40}	C_{55}
B'_{45}	B'_{08}	B'_{05}	B_{45}	B_{75}	B_{43}	B_{73}	B'_{06}	B'_{04}	C_{31}	C_{28}	C_{49}	C_{50}	C_{27}	C_{32}	C_{39}	C_{55}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
B'_{22}	C_{35}	C_{39}	C_{60}	C_{38}	C_{47}	C_{42}	C_{72}	C_{43}	C_{71}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{05}	C_{12}
B'_{23}	C_{34}	C_{38}	C_{60}	C_{39}	C_{46}	C_{43}	C_{72}	C_{42}	C_{71}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{04}	C_{11}
B'_{24}	C_{60}	C_{59}	C_{35}	C_{38}	C_{71}	C_{42}	C_{43}	C_{72}	C_{47}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{66}	C_{78}
B'_{25}	C_{60}	C_{59}	C_{34}	C_{39}	C_{71}	C_{43}	C_{42}	C_{72}	C_{46}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{66}	C_{78}
B'_{26}	C_{34}	C_{38}	C_{35}	C_{59}	C_{46}	C_{72}	C_{43}	C_{42}	C_{47}	C_{71}	C_{66}	C_{78}	C_{65}	C_{77}	C_{04}	C_{11}
B'_{27}	C_{35}	C_{39}	C_{34}	C_{59}	C_{47}	C_{72}	C_{42}	C_{43}	C_{46}	C_{71}	C_{66}	C_{78}	C_{65}	C_{77}	C_{05}	C_{12}
B'_{28}	C_{36}	C_{40}	C_{59}	C_{37}	C_{48}	C_{41}	C_{71}	C_{44}	C_{72}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{06}	C_{13}
B'_{29}	C_{33}	C_{37}	C_{59}	C_{40}	C_{45}	C_{44}	C_{71}	C_{41}	C_{72}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{01}	C_{02}
B'_{30}	C_{59}	C_{60}	C_{36}	C_{37}	C_{72}	C_{41}	C_{44}	C_{71}	C_{48}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{65}	C_{77}
B'_{31}	C_{59}	C_{60}	C_{33}	C_{40}	C_{72}	C_{44}	C_{41}	C_{71}	C_{45}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{65}	C_{77}
B'_{32}	C_{33}	C_{37}	C_{36}	C_{60}	C_{45}	C_{71}	C_{44}	C_{41}	C_{48}	C_{72}	C_{65}	C_{77}	C_{66}	C_{78}	C_{01}	C_{02}
B'_{33}	C_{36}	C_{40}	C_{33}	C_{60}	C_{48}	C_{71}	C_{41}	C_{44}	C_{45}	C_{72}	C_{65}	C_{77}	C_{66}	C_{78}	C_{06}	C_{13}
B'_{34}	C_{36}	C_{40}	C_{57}	C_{38}	C_{48}	C_{42}	C_{69}	C_{44}	C_{70}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{06}	C_{13}
B'_{35}	C_{34}	C_{38}	C_{57}	C_{40}	C_{46}	C_{44}	C_{69}	C_{42}	C_{70}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{04}	C_{11}
B'_{36}	C_{57}	C_{58}	C_{36}	C_{38}	C_{70}	C_{42}	C_{44}	C_{69}	C_{48}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{63}	C_{75}
B'_{37}	C_{57}	C_{58}	C_{34}	C_{40}	C_{70}	C_{44}	C_{42}	C_{69}	C_{46}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{63}	C_{75}
B'_{38}	C_{34}	C_{38}	C_{36}	C_{58}	C_{46}	C_{69}	C_{44}	C_{42}	C_{48}	C_{70}	C_{63}	C_{75}	C_{64}	C_{76}	C_{04}	C_{11}
B'_{39}	C_{36}	C_{40}	C_{34}	C_{58}	C_{48}	C_{69}	C_{42}	C_{44}	C_{46}	C_{70}	C_{63}	C_{75}	C_{64}	C_{76}	C_{06}	C_{13}
B'_{40}	C_{36}	C_{40}	C_{55}	C_{39}	C_{48}	C_{43}	C_{67}	C_{44}	C_{68}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{06}	C_{13}
B'_{41}	C_{35}	C_{39}	C_{55}	C_{40}	C_{47}	C_{44}	C_{67}	C_{43}	C_{68}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{05}	C_{12}
B'_{42}	C_{55}	C_{56}	C_{36}	C_{39}	C_{68}	C_{43}	C_{44}	C_{67}	C_{48}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{61}	C_{73}
B'_{43}	C_{55}	C_{56}	C_{35}	C_{40}	C_{68}	C_{44}	C_{43}	C_{67}	C_{47}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{61}	C_{73}
B'_{44}	C_{35}	C_{39}	C_{36}	C_{56}	C_{47}	C_{67}	C_{44}	C_{43}	C_{48}	C_{68}	C_{61}	C_{73}	C_{62}	C_{74}	C_{05}	C_{12}
B'_{45}	C_{36}	C_{40}	C_{35}	C_{56}	C_{48}	C_{67}	C_{43}	C_{44}	C_{47}	C_{68}	C_{61}	C_{73}	C_{62}	C_{74}	C_{06}	C_{13}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
B_{22}	C_{09}	C_{16}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	C_{66}	C_{78}	C_{65}	C_{77}	B_{29}	B_{31}	B_{27}	B_{32}
B_{23}	C_{08}	C_{15}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	C_{66}	C_{78}	C_{65}	C_{77}	B_{30}	B_{32}	B_{28}	B_{31}
B_{24}	C_{65}	C_{77}	B_{29}	B_{31}	B_{27}	B_{32}	B_{28}	B_{30}	C_{05}	C_{12}	C_{09}	C_{16}	B_{27}	B_{28}	B_{29}	B_{30}
B_{25}	C_{65}	C_{77}	B_{30}	B_{32}	B_{28}	B_{31}	B_{27}	B_{29}	C_{04}	C_{11}	C_{08}	C_{15}	B_{28}	B_{27}	B_{30}	B_{29}
B_{26}	C_{08}	C_{15}	B_{31}	B_{29}	B_{32}	B_{27}	B_{30}	B_{28}	C_{05}	C_{12}	C_{09}	C_{16}	B_{32}	B_{30}	B_{31}	B_{28}
B_{27}	C_{09}	C_{16}	B_{32}	B_{30}	B_{31}	B_{28}	B_{29}	B_{27}	C_{04}	C_{11}	C_{08}	C_{15}	B_{31}	B_{29}	B_{32}	B_{27}
B_{28}	C_{10}	C_{17}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	C_{65}	C_{77}	C_{66}	C_{78}	B_{01}	B_{35}	B_{05}	B_{36}
B_{29}	C_{07}	C_{14}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	C_{65}	C_{77}	C_{66}	C_{78}	B_{34}	B_{36}	B_{33}	B_{35}
B_{30}	C_{66}	C_{78}	B_{01}	B_{35}	B_{05}	B_{36}	B_{33}	B_{34}	C_{06}	C_{13}	C_{10}	C_{17}	B_{05}	B_{33}	B_{01}	B_{34}
B_{31}	C_{66}	C_{78}	B_{34}	B_{36}	B_{33}	B_{35}	B_{05}	B_{01}	C_{01}	C_{02}	C_{07}	C_{14}	B_{33}	B_{05}	B_{34}	B_{01}
B_{32}	C_{07}	C_{14}	B_{35}	B_{01}	B_{36}	B_{05}	B_{34}	B_{33}	C_{06}	C_{13}	C_{10}	C_{17}	B_{36}	B_{34}	B_{35}	B_{33}
B_{33}	C_{10}	C_{17}	B_{36}	B_{34}	B_{35}	B_{33}	B_{01}	B_{05}	C_{01}	C_{02}	C_{07}	C_{14}	B_{35}	B_{01}	B_{36}	B_{05}
B_{34}	C_{10}	C_{17}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	C_{63}	C_{75}	C_{64}	C_{76}	B_{39}	B_{41}	B_{37}	B_{42}
B_{35}	C_{08}	C_{15}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	C_{63}	C_{75}	C_{64}	C_{76}	B_{40}	B_{42}	B_{38}	B_{41}
B_{36}	C_{64}	C_{76}	B_{39}	B_{41}	B_{37}	B_{42}	B_{38}	B_{40}	C_{06}	C_{13}	C_{10}	C_{17}	B_{37}	B_{38}	B_{39}	B_{40}
B_{37}	C_{64}	C_{76}	B_{40}	B_{42}	B_{38}	B_{41}	B_{37}	B_{39}	C_{04}	C_{11}	C_{08}	C_{15}	B_{38}	B_{37}	B_{40}	B_{39}
B_{38}	C_{08}	C_{15}	B_{41}	B_{39}	B_{42}	B_{37}	B_{40}	B_{38}	C_{06}	C_{13}	C_{10}	C_{17}	B_{42}	B_{40}	B_{41}	B_{38}
B_{39}	C_{10}	C_{17}	B_{42}	B_{40}	B_{41}	B_{38}	B_{39}	B_{37}	C_{04}	C_{11}	C_{08}	C_{15}	B_{41}	B_{39}	B_{42}	B_{37}
B_{40}	C_{10}	C_{17}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	C_{61}	C_{73}	C_{62}	C_{74}	B_{45}	B_{47}	B_{43}	B_{48}
B_{41}	C_{09}	C_{16}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	C_{61}	C_{73}	C_{62}	C_{74}	B_{46}	B_{48}	B_{44}	B_{47}
B_{42}	C_{62}	C_{74}	B_{45}	B_{47}	B_{43}	B_{48}	B_{44}	B_{46}	C_{06}	C_{13}	C_{10}	C_{17}	B_{43}	B_{44}	B_{45}	B_{46}
B_{43}	C_{62}	C_{74}	B_{46}	B_{48}	B_{44}	B_{47}	B_{43}	B_{45}	C_{05}	C_{12}	C_{09}	C_{16}	B_{44}	B_{43}	B_{46}	B_{45}
B_{44}	C_{09}	C_{16}	B_{47}	B_{45}	B_{48}	B_{43}	B_{46}	B_{44}	C_{06}	C_{13}	C_{10}	C_{17}	B_{48}	B_{46}	B_{47}	B_{44}
B_{45}	C_{10}	C_{17}	B_{48}	B_{46}	B_{47}	B_{44}	B_{45}	B_{43}	C_{05}	C_{12}	C_{09}	C_{16}	B_{47}	B_{45}	B_{48}	B_{43}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
B_{22}	B_{28}	B_{30}	B_{30}	B_{32}	B_{28}	B_{31}	B_{27}	B_{29}	C_{08}	C_{22}	C_{09}	C_{23}	C_{05}	C_{19}	C_{04}	C_{18}
B_{23}	B_{27}	B_{29}	B_{29}	B_{31}	B_{27}	B_{32}	B_{28}	B_{30}	C_{09}	C_{23}	C_{08}	C_{22}	C_{04}	C_{18}	C_{05}	C_{19}
B_{24}	B_{31}	B_{32}	B_{32}	B_{30}	B_{31}	B_{28}	B_{29}	B_{27}	C_{08}	C_{22}	C_{65}	C_{83}	C_{66}	C_{84}	C_{04}	C_{18}
B_{25}	B_{32}	B_{31}	B_{31}	B_{29}	B_{32}	B_{27}	B_{30}	B_{28}	C_{09}	C_{23}	C_{65}	C_{83}	C_{66}	C_{84}	C_{05}	C_{19}
B_{26}	B_{29}	B_{27}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	C_{65}	C_{83}	C_{08}	C_{22}	C_{04}	C_{18}	C_{66}	C_{84}
B_{27}	B_{30}	B_{28}	B_{28}	B_{27}	B_{30}	B_{29}	B_{32}	B_{31}	C_{65}	C_{83}	C_{09}	C_{23}	C_{05}	C_{19}	C_{66}	C_{84}
B_{28}	B_{33}	B_{34}	B_{34}	B_{36}	B_{33}	B_{35}	B_{05}	B_{01}	C_{07}	C_{21}	C_{10}	C_{24}	C_{06}	C_{20}	C_{01}	C_{03}
B_{29}	B_{05}	B_{01}	B_{01}	B_{35}	B_{05}	B_{36}	B_{33}	B_{34}	C_{10}	C_{24}	C_{07}	C_{21}	C_{01}	C_{03}	C_{06}	C_{20}
B_{30}	B_{35}	B_{36}	B_{36}	B_{34}	B_{35}	B_{33}	B_{01}	B_{05}	C_{07}	C_{21}	C_{66}	C_{84}	C_{65}	C_{83}	C_{01}	C_{03}
B_{31}	B_{36}	B_{35}	B_{35}	B_{01}	B_{36}	B_{05}	B_{34}	B_{33}	C_{10}	C_{24}	C_{66}	C_{84}	C_{65}	C_{83}	C_{06}	C_{20}
B_{32}	B_{01}	B_{05}	B_{05}	B_{33}	B_{01}	B_{34}	B_{35}	B_{36}	C_{66}	C_{84}	C_{07}	C_{21}	C_{01}	C_{03}	C_{65}	C_{83}
B_{33}	B_{34}	B_{33}	B_{33}	B_{05}	B_{34}	B_{01}	B_{36}	B_{35}	C_{66}	C_{84}	C_{10}	C_{24}	C_{06}	C_{20}	C_{65}	C_{83}
B_{34}	B_{38}	B_{40}	B_{40}	B_{42}	B_{38}	B_{41}	B_{37}	P_{39}	C_{08}	C_{22}	C_{10}	C_{24}	C_{06}	C_{20}	C_{04}	C_{18}
B_{35}	B_{37}	B_{39}	B_{39}	B_{41}	B_{37}	B_{42}	B_{38}	B_{40}	C_{10}	C_{24}	C_{08}	C_{22}	C_{04}	C_{18}	C_{06}	C_{20}
B_{36}	B_{41}	B_{42}	B_{42}	B_{40}	B_{41}	B_{38}	B_{39}	B_{37}	C_{08}	C_{22}	C_{64}	C_{82}	C_{63}	C_{81}	C_{04}	C_{18}
B_{37}	B_{42}	B_{41}	B_{41}	B_{39}	B_{42}	B_{37}	B_{40}	B_{38}	C_{10}	C_{24}	C_{64}	C_{82}	C_{63}	C_{81}	C_{06}	C_{20}
B_{38}	B_{39}	B_{37}	B_{37}	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	C_{64}	C_{82}	C_{08}	C_{22}	C_{04}	C_{18}	C_{63}	C_{81}
B_{39}	B_{40}	B_{38}	B_{38}	B_{37}	B_{40}	B_{39}	B_{42}	B_{41}	C_{64}	C_{82}	C_{10}	C_{24}	C_{06}	C_{20}	C_{63}	C_{81}
B_{40}	B_{44}	B_{46}	B_{46}	B_{48}	B_{44}	B_{47}	B_{43}	B_{45}	C_{09}	C_{23}	C_{10}	C_{24}	C_{06}	C_{20}	C_{05}	C_{19}
B_{41}	B_{43}	B_{45}	B_{45}	B_{47}	B_{43}	B_{48}	B_{44}	B_{46}	C_{10}	C_{24}	C_{09}	C_{23}	C_{05}	C_{19}	C_{06}	C_{20}
B_{42}	B_{47}	B_{48}	B_{48}	B_{46}	B_{47}	B_{44}	B_{45}	B_{43}	C_{09}	C_{23}	C_{62}	C_{80}	C_{61}	C_{79}	C_{05}	C_{19}
B_{43}	B_{48}	B_{47}	B_{47}	B_{45}	B_{48}	B_{43}	B_{46}	B_{44}	C_{10}	C_{24}	C_{62}	C_{80}	C_{61}	C_{79}	C_{06}	C_{20}
B_{44}	B_{45}	B_{43}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	C_{62}	C_{80}	C_{09}	C_{23}	C_{05}	C_{19}	C_{61}	C_{79}
B_{45}	B_{46}	B_{44}	B_{44}	B_{43}	B_{46}	B_{45}	B_{48}	B_{47}	C_{62}	C_{80}	C_{10}	C_{24}	C_{06}	C_{20}	C_{61}	C_{79}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{22}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	C_{66}	C_{84}	C_{65}	C_{83}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}
B_{23}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	C_{66}	C_{84}	C_{65}	C_{83}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}
B_{24}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}	C_{05}	C_{19}	C_{09}	C_{23}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}
B_{25}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}	C_{04}	C_{18}	C_{08}	C_{22}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}
B_{26}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}	C_{05}	C_{19}	C_{09}	C_{23}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}
B_{27}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}	C_{04}	C_{18}	C_{08}	C_{22}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}
B_{28}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	C_{65}	C_{83}	C_{66}	C_{84}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}
B_{29}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	C_{65}	C_{83}	C_{66}	C_{84}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}
B_{30}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}	C_{06}	C_{20}	C_{10}	C_{24}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}
B_{31}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}	C_{01}	C_{03}	C_{07}	C_{21}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}
B_{32}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}	C_{06}	C_{20}	C_{10}	C_{24}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}
B_{33}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}	C_{01}	C_{03}	C_{07}	C_{21}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}
B_{34}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	C_{63}	C_{81}	C_{64}	C_{82}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}
B_{35}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	C_{63}	C_{81}	C_{64}	C_{82}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}
B_{36}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}	C_{06}	C_{20}	C_{10}	C_{24}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
B_{37}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}	C_{04}	C_{18}	C_{08}	C_{22}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}
B_{38}	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}	C_{06}	C_{20}	C_{10}	C_{24}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}
B_{39}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}	C_{04}	C_{18}	C_{08}	C_{22}	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}
B_{40}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	C_{61}	C_{79}	C_{62}	C_{80}	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}
B_{41}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	C_{61}	C_{79}	C_{62}	C_{80}	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}
B_{42}	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}	C_{06}	C_{20}	C_{10}	C_{24}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}
B_{43}	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}	C_{05}	C_{19}	C_{09}	C_{23}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}
B_{44}	B_{77}	B_{75}	B_{78}	B_{73}	B_{76}	B_{74}	C_{06}	C_{20}	C_{10}	C_{24}	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}
B_{45}	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}	C_{05}	C_{19}	C_{09}	C_{23}	B_{77}	B_{75}	B_{78}	B_{73}	B_{76}	B_{74}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
B'_{22}	B_{60}	B_{62}	B_{58}	B_{61}	B_{57}	B_{59}	C_{11}	C_{18}	C_{15}	C_{22}	C_{12}	C_{19}	C_{16}	C_{23}	B_{87}	B_{88}
B'_{23}	B_{59}	B_{61}	B_{57}	B_{62}	B_{58}	B_{60}	C_{12}	C_{19}	C_{16}	C_{23}	C_{11}	C_{18}	C_{15}	C_{22}	B_{88}	B_{87}
B'_{24}	B_{62}	B_{60}	B_{61}	B_{58}	B_{59}	B_{57}	C_{11}	C_{18}	C_{15}	C_{22}	C_{78}	C_{84}	C_{77}	C_{83}	B_{89}	B_{91}
B'_{25}	B_{61}	B_{59}	B_{62}	B_{57}	B_{60}	B_{58}	C_{12}	C_{19}	C_{16}	C_{23}	C_{78}	C_{84}	C_{77}	C_{83}	B_{90}	B_{92}
B'_{26}	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	C_{78}	C_{84}	C_{77}	C_{83}	C_{11}	C_{18}	C_{15}	C_{22}	B_{91}	B_{89}
B'_{27}	B_{58}	B_{57}	B_{60}	B_{59}	B_{62}	B_{61}	C_{78}	C_{84}	C_{77}	C_{83}	C_{12}	C_{19}	C_{16}	C_{23}	B_{92}	B_{90}
B'_{28}	B_{64}	B_{66}	B_{63}	B_{65}	B_{11}	B_{07}	C_{02}	C_{03}	C_{14}	C_{21}	C_{13}	C_{20}	C_{17}	C_{24}	B_{15}	B_{93}
B'_{29}	B_{07}	B_{65}	B_{11}	B_{66}	B_{63}	B_{64}	C_{13}	C_{20}	C_{17}	C_{24}	C_{02}	C_{03}	C_{14}	C_{21}	B_{93}	B_{15}
B'_{30}	B_{66}	B_{64}	B_{65}	B_{63}	B_{07}	B_{11}	C_{02}	C_{03}	C_{14}	C_{21}	C_{77}	C_{83}	C_{78}	C_{84}	B_{17}	B_{95}
B'_{31}	B_{65}	B_{07}	B_{66}	B_{11}	B_{64}	B_{63}	C_{13}	C_{20}	C_{17}	C_{24}	C_{77}	C_{83}	C_{78}	C_{84}	B_{94}	B_{96}
B'_{32}	B_{11}	B_{63}	B_{07}	B_{64}	B_{65}	B_{66}	C_{77}	C_{83}	C_{78}	C_{84}	C_{02}	C_{03}	C_{14}	C_{21}	B_{95}	B_{17}
B'_{33}	B_{63}	B_{11}	B_{64}	B_{07}	B_{66}	B_{65}	C_{77}	C_{83}	C_{78}	C_{84}	C_{13}	C_{20}	C_{17}	C_{24}	B_{96}	B_{94}
B'_{34}	B_{70}	B_{72}	B_{68}	B_{71}	B_{67}	B_{69}	C_{11}	C_{18}	C_{15}	C_{22}	C_{13}	C_{20}	C_{17}	C_{24}	B_{97}	B_{98}
B'_{35}	B_{69}	B_{71}	B_{67}	B_{72}	B_{68}	B_{70}	C_{13}	C_{20}	C_{17}	C_{24}	C_{11}	C_{18}	C_{15}	C_{22}	B_{98}	B_{97}
B'_{36}	B_{72}	B_{70}	B_{71}	B_{68}	B_{69}	B_{67}	C_{11}	C_{18}	C_{15}	C_{22}	C_{75}	C_{81}	C_{76}	C_{82}	B_{99}	B'_{02}
B'_{37}	B_{71}	B_{69}	B_{72}	B_{67}	B_{70}	B_{68}	C_{13}	C_{20}	C_{17}	C_{24}	C_{75}	C_{81}	C_{76}	C_{82}	B'_{01}	B'_{03}
B'_{38}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}	C_{75}	C_{81}	C_{76}	C_{82}	C_{11}	C_{18}	C_{15}	C_{22}	B'_{02}	B_{99}
B'_{39}	B_{68}	B_{67}	B_{70}	B_{69}	B_{72}	B_{71}	C_{75}	C_{81}	C_{76}	C_{82}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{03}	B'_{01}
B'_{40}	B_{76}	B_{78}	B_{74}	B_{77}	B_{73}	B_{75}	C_{12}	C_{19}	C_{16}	C_{23}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{04}	B'_{05}
B'_{41}	B_{75}	B_{77}	B_{73}	B_{78}	B_{74}	B_{76}	C_{13}	C_{20}	C_{17}	C_{24}	C_{12}	C_{19}	C_{16}	C_{23}	B'_{05}	B'_{04}
B'_{42}	B_{78}	B_{76}	B_{77}	B_{74}	B_{75}	B_{73}	C_{12}	C_{19}	C_{16}	C_{23}	C_{73}	C_{79}	C_{74}	C_{80}	B'_{06}	B'_{08}
B'_{43}	B_{77}	B_{79}	B_{78}	B_{73}	B_{76}	B_{74}	C_{13}	C_{20}	C_{17}	C_{24}	C_{73}	C_{79}	C_{74}	C_{80}	B'_{07}	B'_{09}
B'_{44}	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	C_{73}	C_{79}	C_{74}	C_{80}	C_{12}	C_{19}	C_{16}	C_{23}	B'_{08}	B'_{06}
B'_{45}	B_{74}	B_{73}	B_{76}	B_{75}	B_{78}	B_{77}	C_{73}	C_{79}	C_{74}	C_{80}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{09}	B'_{07}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
B'_{22}	B_{89}	B_{90}	B_{91}	B_{92}	C_{78}	C_{84}	C_{77}	C_{83}	B_{89}	B_{91}	B_{87}	B_{92}	B_{88}	B_{90}	B_{90}	$B_{\,\cdot}$
B'_{23}	B_{90}	B_{89}	B_{92}	B_{91}	C_{78}	C_{84}	C_{77}	C_{83}	B_{90}	B_{92}	B_{88}	B_{91}	B_{87}	B_{89}	B_{89}	B_{91}
B'_{24}	B_{87}	B_{92}	B_{88}	B_{90}	C_{12}	C_{19}	C_{16}	C_{23}	B_{87}	B_{88}	B_{89}	B_{90}	B_{91}	B_{92}	B_{92}	B_{90}
B'_{25}	B_{88}	B_{91}	B_{87}	B_{89}	C_{11}	C_{18}	C_{15}	C_{22}	B_{88}	B_{87}	B_{90}	B_{89}	B_{92}	B_{91}	B_{91}	B_{89}
B'_{26}	B_{92}	B_{87}	B_{90}	B_{88}	C_{12}	C_{19}	C_{16}	C_{23}	B_{92}	B_{90}	B_{91}	B_{88}	B_{89}	B_{87}	B_{87}	B_{88}
B'_{27}	$B_{\,1}$	B_{88}	B_{89}	B_{87}	C_{11}	C_{18}	C_{15}	C_{22}	B_{91}	B_{89}	B_{92}	B_{87}	B_{90}	B_{88}	B_{88}	B_{87}
B'_{28}	B_{17}	B_{94}	B_{95}	B_{96}	C_{77}	C_{83}	C_{78}	C_{84}	B_{17}	B_{95}	B_{15}	B_{96}	B_{93}	B_{94}	B_{94}	B_{96}
B'_{29}	B_{94}	B_{17}	B_{96}	B_{95}	C_{77}	C_{83}	C_{78}	C_{84}	B_{94}	B_{96}	B_{93}	B_{95}	B_{15}	B_{17}	B_{17}	B_{95}
B'_{30}	B_{15}	B_{96}	B_{93}	B_{94}	C_{13}	C_{20}	C_{17}	C_{24}	B_{15}	B_{93}	B_{17}	B_{94}	B_{95}	B_{96}	B_{96}	B_{94}
B'_{31}	B_{93}	B_{95}	B_{15}	B_{17}	C_{02}	C_{03}	C_{14}	C_{21}	B_{93}	B_{15}	B_{94}	B_{17}	B_{96}	B_{95}	B_{95}	B_{17}
B'_{32}	B_{96}	B_{15}	B_{94}	B_{93}	C_{13}	C_{20}	C_{17}	C_{24}	B_{96}	B_{94}	B_{95}	B_{93}	B_{17}	B_{15}	B_{15}	B_{93}
B'_{33}	B_{95}	B_{93}	B_{17}	B_{15}	C_{02}	C_{03}	C_{14}	C_{21}	B_{95}	B_{17}	B_{96}	B_{15}	B_{94}	B_{93}	B_{93}	B_{15}
B'_{34}	B_{99}	B'_{01}	B'_{02}	B'_{03}	C_{75}	C_{81}	C_{76}	C_{82}	B_{99}	B'_{02}	B_{97}	B'_{03}	B_{98}	B'_{01}	B'_{01}	B'_{03}
B'_{35}	B'_{01}	B_{99}	B'_{03}	B'_{02}	C_{75}	C_{81}	C_{76}	C_{82}	B'_{01}	B'_{03}	B_{98}	B'_{02}	B_{97}	B_{99}	B_{99}	B'_{02}
B'_{36}	B_{97}	B'_{03}	B_{98}	B'_{01}	C_{13}	C_{20}	C_{17}	C_{24}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{03}	B'_{01}
B'_{37}	B_{98}	B'_{02}	B_{97}	B_{99}	C_{11}	C_{18}	C_{15}	C_{22}	B_{98}	B_{97}	B'_{01}	B_{99}	B'_{03}	B'_{02}	B'_{02}	B_{99}
B'_{38}	B'_{03}	B_{97}	B'_{01}	B_{98}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{03}	B'_{01}	B'_{02}	B_{98}	B_{99}	B_{97}	B_{97}	B_{98}
B'_{39}	B'_{02}	B_{98}	B_{99}	B_{97}	C_{11}	C_{18}	C_{15}	C_{22}	B'_{02}	B_{99}	B'_{03}	B_{97}	B'_{01}	B_{98}	B_{98}	B_{97}
B'_{40}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	C_{73}	C_{79}	C_{74}	C_{80}	B'_{06}	B'_{08}	B'_{04}	B'_{09}	B'_{05}	B'_{07}	B'_{07}	B'_{09}
B'_{41}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	C_{73}	C_{79}	C_{74}	C_{80}	B'_{07}	B'_{09}	B'_{05}	B'_{08}	B'_{04}	B'_{06}	B'_{06}	B'_{08}
B'_{42}	B'_{04}	B'_{09}	B'_{05}	B'_{07}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{04}	B'_{05}	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{09}	B'_{07}
B'_{43}	B'_{05}	B'_{08}	B'_{04}	B'_{06}	C_{12}	C_{19}	C_{16}	C_{23}	B'_{05}	B'_{04}	B'_{07}	B'_{06}	B'_{09}	B'_{08}	B'_{08}	B'_{06}
B'_{44}	B'_{09}	B'_{04}	B'_{07}	B'_{05}	C_{13}	C_{20}	C_{17}	C_{24}	B'_{09}	B'_{07}	B'_{08}	B'_{05}	B'_{06}	B'_{04}	B'_{04}	B'_{05}
B'_{45}	B'_{08}	B'_{05}	B'_{06}	B'_{04}	C_{12}	C_{19}	C_{16}	C_{23}	B'_{08}	B'_{06}	B'_{09}	B'_{04}	B'_{07}	B'_{05}	B'_{05}	B'_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
B'_{22}	B_{88}	B_{91}	B_{87}	B_{89}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
B'_{23}	B_{87}	B_{92}	B_{88}	B_{90}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B'_{24}	B_{91}	B_{88}	B_{89}	B_{87}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}
B'_{25}	B_{92}	B_{87}	B_{90}	B_{88}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}
B'_{26}	B_{89}	B_{90}	B_{91}	B_{92}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B'_{27}	B_{90}	B_{89}	B_{92}	B_{91}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
B'_{28}	B_{93}	B_{95}	B_{15}	B_{17}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
B'_{29}	B_{15}	B_{96}	B_{93}	B_{94}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B'_{30}	B_{95}	B_{93}	B_{17}	B_{15}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}
B'_{31}	B_{96}	B_{15}	B_{94}	B_{93}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}
B'_{32}	B_{17}	B_{94}	B_{95}	B_{96}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
B'_{33}	B_{94}	B_{17}	B_{96}	B_{95}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
B'_{34}	B_{98}	B_{02}	B_{97}	B_{99}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
B'_{35}	B_{97}	B_{03}	B_{98}	B_{01}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B'_{36}	B_{02}	B_{98}	B_{99}	B_{97}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}
B'_{37}	B_{03}	B_{97}	B_{01}	B_{98}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}
B'_{38}	B_{99}	B_{01}	B_{02}	B_{03}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
B'_{39}	B_{01}	B_{99}	B_{03}	B_{02}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
B'_{40}	B_{05}	B_{08}	B_{04}	B_{06}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
B'_{41}	B_{04}	B_{09}	B_{05}	B_{07}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
B'_{42}	B_{08}	B_{05}	B_{06}	B_{04}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}
B'_{43}	B_{09}	B_{04}	B_{07}	B_{05}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}
B'_{44}	B_{06}	B_{07}	B_{08}	B_{09}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
B'_{45}	B_{07}	B_{06}	B_{09}	B_{08}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
B'_{22}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	B_{24}	B_{26}	B_{22}	B_{27}
B'_{23}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	B_{25}	B_{27}	B_{23}	B_{26}
B'_{24}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{22}	B_{23}	B_{24}	B_{25}
B'_{25}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{23}	B_{22}	B_{25}	B_{24}
B'_{26}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{27}	B_{25}	B_{26}	B_{23}
B'_{27}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{26}	B_{24}	B_{27}	B_{22}
B'_{28}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	B_{30}	B_{32}	B_{28}	B_{33}
B'_{29}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	B_{31}	B_{33}	B_{29}	B_{32}
B'_{30}	B_{30}	B_{32}	B_{28}	B_{33}	B_{29}	B_{31}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{28}	B_{29}	B_{30}	B_{31}
B'_{31}	B_{31}	B_{33}	B_{29}	B_{32}	B_{28}	B_{30}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{29}	B_{28}	B_{31}	B_{30}
B'_{32}	B_{32}	B_{30}	B_{33}	B_{28}	B_{31}	B_{29}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{33}	B_{31}	B_{32}	B_{29}
B'_{33}	B_{33}	B_{31}	B_{32}	B_{29}	B_{30}	B_{28}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	B_{32}	B_{30}	B_{33}	B_{28}
B'_{34}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	B_{36}	B_{38}	B_{34}	B_{39}
B'_{35}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	B_{37}	B_{39}	B_{35}	B_{38}
B'_{36}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{34}	B_{35}	B_{36}	B_{37}
B'_{37}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{35}	B_{34}	B_{37}	B_{36}
B'_{38}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{39}	B_{37}	B_{38}	B_{35}
B'_{39}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	B_{38}	B_{36}	B_{39}	B_{34}
B'_{40}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	B_{42}	B_{44}	B_{40}	B_{45}
B'_{41}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	B_{43}	B_{45}	B_{41}	B_{44}
B'_{42}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{40}	B_{41}	B_{42}	B_{43}
B'_{43}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{41}	B_{40}	B_{43}	B_{42}
B'_{44}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	B_{45}	B_{43}	B_{44}	B_{41}
B'_{45}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	B_{44}	B_{42}	B_{45}	B_{40}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{38}	B_{39}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
B_{22}	B_{23}	B_{25}	B_{25}	B_{27}	B_{23}	B_{26}	B_{22}	B_{24}	D_{01}	D_{02}	D_{03}	C_{04}	C_{05}	C_{66}	D_{04}	C_{08}
B_{23}	B_{22}	B_{24}	B_{24}	B_{26}	B_{22}	B_{27}	B_{23}	B_{25}	D_{01}	D_{02}	D_{03}	C_{05}	C_{04}	C_{66}	D_{04}	C_{09}
B_{24}	B_{26}	B_{27}	B_{27}	B_{25}	B_{26}	B_{23}	B_{24}	B_{22}	D_{01}	D_{02}	D_{03}	C_{04}	C_{66}	C_{05}	D_{04}	C_{08}
B_{25}	B_{27}	B_{26}	B_{26}	B_{24}	B_{27}	B_{22}	B_{25}	B_{23}	D_{01}	D_{02}	D_{03}	C_{05}	C_{66}	C_{04}	D_{04}	C_{09}
B_{26}	B_{24}	B_{22}	B_{22}	B_{23}	B_{24}	B_{25}	B_{26}	B_{27}	D_{01}	D_{02}	D_{03}	C_{66}	C_{04}	C_{05}	D_{04}	C_{65}
B_{27}	B_{25}	B_{23}	B_{23}	B_{22}	B_{25}	B_{24}	B_{27}	B_{26}	D_{01}	D_{02}	D_{03}	C_{66}	C_{05}	C_{04}	D_{04}	C_{65}
B_{28}	B_{29}	B_{31}	B_{31}	B_{33}	B_{29}	B_{32}	B_{28}	B_{30}	D_{01}	D_{02}	D_{03}	C_{01}	C_{06}	C_{65}	D_{04}	C_{07}
B_{29}	B_{28}	B_{30}	B_{30}	B_{32}	B_{28}	B_{33}	B_{29}	B_{31}	D_{01}	D_{02}	D_{03}	C_{06}	C_{01}	C_{65}	D_{04}	C_{10}
B_{30}	B_{32}	B_{33}	B_{33}	B_{31}	B_{32}	B_{29}	B_{30}	B_{28}	D_{01}	D_{02}	D_{03}	C_{01}	C_{65}	C_{06}	D_{04}	C_{07}
B_{31}	B_{33}	B_{32}	B_{32}	B_{30}	B_{33}	B_{28}	B_{31}	B_{29}	D_{01}	D_{02}	D_{03}	C_{06}	C_{65}	C_{01}	D_{04}	C_{10}
B_{32}	B_{30}	B_{28}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	D_{01}	D_{02}	D_{03}	C_{65}	C_{01}	C_{06}	D_{04}	C_{66}
B_{33}	B_{31}	B_{29}	B_{29}	B_{28}	B_{31}	B_{30}	B_{33}	B_{32}	D_{01}	D_{02}	D_{03}	C_{65}	C_{06}	C_{01}	D_{04}	C_{66}
B_{34}	B_{35}	B_{37}	B_{37}	B_{39}	B_{35}	B_{38}	B_{34}	B_{36}	D_{01}	D_{02}	D_{03}	C_{04}	C_{06}	C_{63}	D_{04}	C_{08}
B_{35}	B_{34}	B_{36}	B_{36}	B_{38}	B_{34}	B_{39}	B_{35}	B_{37}	D_{01}	D_{02}	D_{03}	C_{06}	C_{04}	C_{63}	D_{04}	C_{10}
B_{36}	B_{38}	B_{39}	B_{39}	B_{37}	B_{38}	B_{35}	B_{36}	B_{34}	D_{01}	D_{02}	D_{03}	C_{04}	C_{63}	C_{06}	D_{04}	C_{08}
B_{37}	B_{39}	B_{38}	B_{38}	B_{36}	B_{39}	B_{34}	B_{37}	B_{35}	D_{01}	D_{02}	D_{03}	C_{06}	C_{63}	C_{04}	D_{04}	C_{10}
B_{38}	B_{36}	B_{34}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	D_{01}	D_{02}	D_{03}	C_{63}	C_{04}	C_{06}	D_{04}	C_{64}
B_{39}	B_{37}	B_{35}	B_{35}	B_{34}	B_{37}	B_{36}	B_{39}	B_{38}	D_{01}	D_{02}	D_{03}	C_{63}	C_{06}	C_{04}	D_{04}	C_{64}
B_{40}	B_{41}	B_{43}	B_{43}	B_{45}	B_{41}	B_{44}	B_{40}	B_{42}	D_{01}	D_{02}	D_{03}	C_{05}	C_{06}	C_{61}	D_{04}	C_{09}
B_{41}	B_{40}	B_{42}	B_{42}	B_{44}	B_{40}	B_{45}	B_{41}	B_{43}	D_{01}	D_{02}	D_{03}	C_{06}	C_{05}	C_{61}	D_{04}	C_{10}
B_{42}	B_{44}	B_{45}	B_{45}	B_{43}	B_{44}	B_{41}	B_{42}	B_{40}	D_{01}	D_{02}	D_{03}	C_{05}	C_{61}	C_{06}	D_{04}	C_{09}
B_{43}	B_{45}	B_{44}	B_{44}	B_{42}	B_{45}	B_{40}	B_{43}	B_{41}	D_{01}	D_{02}	D_{03}	C_{06}	C_{61}	C_{05}	D_{04}	C_{10}
B_{44}	B_{42}	B_{40}	B_{40}	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	D_{01}	D_{02}	D_{03}	C_{61}	C_{05}	C_{06}	D_{04}	C_{62}
B_{45}	B_{43}	B_{41}	B_{41}	B_{40}	B_{43}	B_{42}	B_{45}	B_{44}	D_{01}	D_{02}	D_{03}	C_{61}	C_{06}	C_{05}	D_{04}	C_{62}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{09}	c_{10}	c_{11}	c_{12}	c_{13}	c_{14}	c_{15}	c_{16}	c_{17}	c_{18}	c_{19}	c_{20}	c_{21}	c_{22}	c_{23}	c_{24}
B_{22}	c_{09}	c_{65}	c_{11}	c_{12}	c_{73}	D_{04}	c_{15}	c_{16}	c_{77}	c_{18}	c_{19}	c_{84}	D_{04}	c_{22}	c_{23}	c_{83}
B_{23}	c_{08}	c_{65}	c_{12}	c_{11}	c_{78}	D_{04}	c_{16}	c_{15}	c_{77}	c_{19}	c_{18}	c_{84}	D_{04}	c_{23}	c_{22}	c_{83}
B_{24}	c_{65}	c_{09}	c_{11}	c_{78}	c_{12}	D_{04}	c_{15}	c_{77}	c_{16}	c_{18}	c_{84}	c_{19}	D_{04}	c_{22}	c_{83}	c_{23}
B_{25}	c_{65}	c_{08}	c_{12}	c_{78}	c_{11}	D_{04}	c_{16}	c_{77}	c_{15}	c_{19}	c_{84}	c_{18}	D_{04}	c_{23}	c_{83}	c_{22}
B_{26}	c_{08}	c_{09}	c_{78}	c_{11}	c_{12}	D_{04}	c_{77}	c_{15}	c_{16}	c_{84}	c_{18}	c_{19}	D_{04}	c_{83}	c_{22}	c_{23}
B_{27}	c_{09}	c_{08}	c_{78}	c_{12}	c_{11}	D_{04}	c_{77}	c_{16}	c_{15}	c_{84}	c_{19}	c_{18}	D_{04}	c_{83}	c_{23}	c_{22}
B_{28}	c_{10}	c_{66}	c_{02}	c_{13}	c_{77}	D_{04}	c_{14}	c_{17}	c_{78}	c_{03}	c_{20}	c_{83}	D_{04}	c_{21}	c_{24}	c_{84}
B_{29}	c_{07}	c_{66}	c_{13}	c_{02}	c_{77}	D_{04}	c_{17}	c_{14}	c_{78}	c_{20}	c_{03}	c_{83}	D_{04}	c_{24}	c_{21}	c_{84}
B_{30}	c_{66}	c_{10}	c_{02}	c_{77}	c_{13}	D_{04}	c_{14}	c_{78}	c_{17}	c_{03}	c_{83}	c_{20}	D_{04}	c_{21}	c_{84}	c_{24}
B_{31}	c_{66}	c_{07}	c_{13}	c_{77}	c_{02}	D_{04}	c_{17}	c_{78}	c_{14}	c_{20}	c_{83}	c_{03}	D_{04}	c_{24}	c_{84}	c_{21}
B_{32}	c_{07}	c_{10}	c_{77}	c_{02}	c_{13}	D_{04}	c_{78}	c_{14}	c_{17}	c_{83}	c_{03}	c_{20}	D_{04}	c_{84}	c_{21}	c_{24}
B_{33}	c_{10}	c_{07}	c_{77}	c_{13}	c_{02}	D_{04}	c_{78}	c_{17}	c_{14}	c_{83}	c_{20}	c_{03}	D_{04}	c_{84}	c_{24}	c_{21}
B_{34}	c_{10}	c_{64}	c_{11}	c_{13}	c_{75}	D_{04}	c_{15}	c_{17}	c_{76}	c_{18}	c_{20}	c_{81}	D_{04}	c_{22}	c_{24}	c_{82}
B_{35}	c_{08}	c_{64}	c_{13}	c_{11}	c_{75}	D_{04}	c_{17}	c_{15}	c_{76}	c_{20}	c_{18}	c_{81}	D_{04}	c_{24}	c_{22}	c_{82}
B_{36}	c_{64}	c_{10}	c_{11}	c_{75}	c_{13}	D_{04}	c_{15}	c_{76}	c_{17}	c_{18}	c_{81}	c_{20}	D_{04}	c_{22}	c_{82}	c_{24}
B_{37}	c_{64}	c_{08}	c_{13}	c_{75}	c_{11}	D_{04}	c_{17}	c_{76}	c_{15}	c_{20}	c_{81}	c_{18}	D_{04}	c_{24}	c_{82}	c_{22}
B_{38}	c_{08}	c_{10}	c_{75}	c_{11}	c_{13}	D_{04}	c_{76}	c_{15}	c_{17}	c_{81}	c_{18}	c_{20}	D_{04}	c_{82}	c_{22}	c_{24}
B_{39}	c_{10}	c_{08}	c_{75}	c_{13}	c_{11}	D_{04}	c_{76}	c_{17}	c_{15}	c_{81}	c_{20}	c_{18}	D_{04}	c_{82}	c_{24}	c_{22}
B_{40}	c_{10}	c_{62}	c_{12}	c_{13}	c_{73}	D_{04}	c_{16}	c_{17}	c_{74}	c_{19}	c_{20}	c_{79}	D_{04}	c_{23}	c_{24}	c_{80}
B_{41}	c_{09}	c_{62}	c_{13}	c_{12}	c_{73}	D_{04}	c_{17}	c_{16}	c_{74}	c_{20}	c_{19}	c_{79}	D_{04}	c_{24}	c_{23}	c_{80}
B_{42}	c_{62}	c_{10}	c_{12}	c_{73}	c_{13}	D_{04}	c_{16}	c_{74}	c_{17}	c_{19}	c_{79}	c_{20}	D_{04}	c_{23}	c_{80}	c_{24}
B_{43}	c_{62}	c_{09}	c_{13}	c_{73}	c_{12}	D_{04}	c_{17}	c_{74}	c_{16}	c_{20}	c_{79}	c_{19}	D_{04}	c_{24}	c_{80}	c_{23}
B_{44}	c_{09}	c_{10}	c_{73}	c_{12}	c_{13}	D_{04}	c_{74}	c_{16}	c_{17}	c_{79}	c_{19}	c_{20}	D_{04}	c_{80}	c_{23}	c_{24}
B_{45}	c_{10}	c_{09}	c_{73}	c_{13}	c_{12}	D_{04}	c_{74}	c_{17}	c_{16}	c_{79}	c_{20}	c_{19}	D_{04}	c_{80}	c_{24}	c_{23}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
B'_{22}	D_{01}	C_{26}	C_{27}	C_{54}	D_{02}	C_{30}	C_{31}	C_{53}	D_{01}	C_{34}	C_{35}	C_{60}	D_{03}	C_{38}	C_{39}	C_{59}
B'_{23}	D_{01}	C_{27}	C_{26}	C_{54}	D_{02}	C_{31}	C_{30}	C_{53}	D_{01}	C_{35}	C_{34}	C_{60}	D_{03}	C_{39}	C_{38}	C_{59}
B'_{24}	D_{01}	C_{26}	C_{54}	C_{27}	D_{02}	C_{30}	C_{53}	C_{31}	D_{01}	C_{34}	C_{60}	C_{35}	D_{03}	C_{38}	C_{59}	C_{39}
B'_{25}	D_{01}	C_{27}	C_{54}	C_{26}	D_{02}	C_{31}	C_{53}	C_{30}	D_{01}	C_{35}	C_{60}	C_{34}	D_{03}	C_{39}	C_{59}	C_{38}
B'_{26}	D_{01}	C_{54}	C_{26}	C_{27}	D_{02}	C_{53}	C_{30}	C_{31}	D_{01}	C_{60}	C_{34}	C_{35}	D_{03}	C_{59}	C_{38}	C_{39}
B'_{27}	D_{01}	C_{54}	C_{27}	C_{26}	D_{02}	C_{53}	C_{31}	C_{30}	D_{01}	C_{60}	C_{35}	C_{34}	D_{03}	C_{59}	C_{39}	C_{38}
B'_{28}	D_{01}	C_{25}	C_{28}	C_{53}	D_{02}	C_{29}	C_{32}	C_{54}	D_{01}	C_{33}	C_{36}	C_{59}	D_{03}	C_{37}	C_{40}	C_{60}
B'_{29}	D_{01}	C_{28}	C_{25}	C_{53}	D_{02}	C_{32}	C_{29}	C_{54}	D_{01}	C_{36}	C_{33}	C_{59}	D_{03}	C_{40}	C_{37}	C_{60}
B'_{30}	D_{01}	C_{25}	C_{53}	C_{28}	D_{02}	C_{29}	C_{54}	C_{32}	D_{01}	C_{33}	C_{59}	C_{36}	D_{03}	C_{37}	C_{60}	C_{40}
B'_{31}	D_{01}	C_{28}	C_{53}	C_{25}	D_{02}	C_{32}	C_{54}	C_{29}	D_{01}	C_{36}	C_{59}	C_{33}	D_{03}	C_{40}	C_{60}	C_{37}
B'_{32}	D_{01}	C_{53}	C_{25}	C_{28}	D_{02}	C_{54}	C_{29}	C_{32}	D_{01}	C_{59}	C_{33}	C_{36}	D_{03}	C_{60}	C_{37}	C_{40}
B'_{33}	D_{01}	C_{53}	C_{28}	C_{25}	D_{02}	C_{54}	C_{32}	C_{29}	D_{01}	C_{59}	C_{36}	C_{33}	D_{03}	C_{60}	C_{40}	C_{37}
B_{34}	D_{01}	C_{26}	C_{28}	C_{51}	D_{02}	C_{30}	C_{32}	C_{52}	D_{01}	C_{34}	C_{36}	C_{57}	D_{03}	C_{38}	C_{40}	C_{58}
B'_{35}	D_{01}	C_{28}	C_{26}	C_{51}	D_{02}	C_{32}	C_{30}	C_{52}	D_{01}	C_{36}	C_{34}	C_{57}	D_{03}	C_{40}	C_{33}	C_{58}
B'_{36}	D_{01}	C_{26}	C_{51}	C_{28}	D_{02}	C_{30}	C_{52}	C_{32}	D_{01}	C_{34}	C_{57}	C_{36}	D_{03}	C_{38}	C_{58}	C_{40}
B'_{37}	D_{01}	C_{28}	C_{51}	C_{26}	D_{02}	C_{32}	C_{52}	C_{30}	D_{01}	C_{36}	C_{57}	C_{34}	D_{03}	C_{40}	C_{58}	C_{38}
B'_{38}	D_{01}	C_{51}	C_{26}	C_{28}	D_{02}	C_{52}	C_{30}	C_{32}	D_{01}	C_{57}	C_{34}	C_{36}	D_{03}	C_{58}	C_{38}	C_{40}
B'_{39}	D_{01}	C_{51}	C_{28}	C_{26}	D_{02}	C_{52}	C_{32}	C_{30}	D_{01}	C_{57}	C_{36}	C_{34}	D_{03}	C_{58}	C_{40}	C_{38}
B'_{40}	C_{01}	C_{27}	C_{28}	C_{49}	D_{02}	C_{31}	C_{32}	C_{50}	D_{01}	C_{35}	C_{36}	C_{55}	D_{03}	C_{39}	C_{40}	C_{56}
B'_{41}	D_{01}	C_{28}	C_{27}	C_{49}	D_{02}	C_{32}	C_{31}	C_{50}	D_{01}	C_{36}	C_{35}	C_{55}	D_{03}	C_{40}	C_{39}	C_{56}
B'_{42}	D_{01}	C_{27}	C_{49}	C_{28}	D_{02}	C_{31}	C_{50}	C_{32}	D_{01}	C_{35}	C_{55}	C_{36}	D_{03}	C_{39}	C_{56}	C_{40}
B'_{43}	D_{01}	C_{28}	C_{49}	C_{27}	D_{02}	C_{32}	C_{50}	C_{31}	D_{01}	C_{36}	C_{55}	C_{35}	D_{03}	C_{40}	C_{56}	C_{39}
B'_{44}	D_{01}	C_{49}	C_{27}	C_{28}	D_{02}	C_{50}	C_{31}	C_{32}	D_{01}	C_{55}	C_{35}	C_{36}	D_{03}	C_{56}	C_{39}	C_{40}
B'_{45}	D_{01}	C_{49}	C_{28}	C_{27}	D_{02}	C_{50}	C_{32}	C_{31}	D_{01}	C_{55}	C_{36}	C_{35}	D_{03}	C_{56}	C_{40}	C_{39}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
B_{22}	D_{02}	C_{42}	C_{43}	C_{72}	D_{03}	C_{46}	C_{47}	C_{71}	C_{26}	C_{30}	C_{27}	C_{31}	C_{53}	C_{54}	C_{34}	C_{38}
B_{23}	D_{02}	C_{43}	C_{42}	C_{72}	D_{03}	C_{47}	C_{46}	C_{71}	C_{27}	C_{31}	C_{26}	C_{30}	C_{53}	C_{54}	C_{35}	C_{39}
B_{24}	D_{02}	C_{42}	C_{72}	C_{43}	D_{03}	C_{46}	C_{71}	C_{47}	C_{26}	C_{30}	C_{54}	C_{53}	C_{31}	C_{27}	C_{34}	C_{38}
B_{25}	D_{02}	C_{43}	C_{72}	C_{42}	D_{03}	C_{47}	C_{71}	C_{46}	C_{27}	C_{31}	C_{54}	C_{53}	C_{30}	C_{26}	C_{35}	C_{39}
B_{26}	D_{02}	C_{72}	C_{42}	C_{43}	D_{03}	C_{71}	C_{46}	C_{47}	C_{54}	C_{53}	C_{26}	C_{30}	C_{31}	C_{27}	C_{60}	C_{59}
B_{27}	D_{02}	C_{72}	C_{43}	C_{42}	D_{03}	C_{71}	C_{47}	C_{46}	C_{54}	C_{53}	C_{27}	C_{31}	C_{30}	C_{26}	C_{60}	C_{59}
B_{28}	D_{02}	C_{41}	C_{44}	C_{71}	D_{03}	C_{45}	C_{48}	C_{72}	C_{25}	C_{29}	C_{28}	C_{32}	C_{54}	C_{53}	C_{33}	C_{37}
B_{29}	D_{02}	C_{44}	C_{41}	C_{71}	D_{03}	C_{48}	C_{45}	C_{72}	C_{28}	C_{32}	C_{25}	C_{29}	C_{54}	C_{53}	C_{36}	C_{40}
B_{30}	D_{02}	C_{41}	C_{71}	C_{44}	D_{03}	C_{45}	C_{72}	C_{48}	C_{25}	C_{29}	C_{53}	C_{54}	C_{32}	C_{28}	C_{33}	C_{37}
B_{31}	D_{02}	C_{44}	C_{71}	C_{41}	D_{03}	C_{48}	C_{72}	C_{45}	C_{28}	C_{32}	C_{53}	C_{54}	C_{29}	C_{25}	C_{36}	C_{40}
B_{32}	D_{02}	C_{71}	C_{41}	C_{44}	D_{03}	C_{72}	C_{45}	C_{48}	C_{53}	C_{54}	C_{25}	C_{29}	C_{32}	C_{28}	C_{59}	C_{60}
B_{33}	D_{02}	C_{71}	C_{44}	C_{41}	D_{03}	C_{72}	C_{48}	C_{45}	C_{53}	C_{54}	C_{28}	C_{32}	C_{29}	C_{25}	C_{59}	C_{60}
B_{34}	D_{02}	C_{42}	C_{44}	C_{69}	D_{03}	C_{46}	C_{48}	C_{70}	C_{26}	C_{30}	C_{28}	C_{32}	C_{52}	C_{51}	C_{34}	C_{38}
B_{35}	D_{02}	C_{44}	C_{42}	C_{69}	D_{03}	C_{48}	C_{46}	C_{70}	C_{28}	C_{32}	C_{26}	C_{30}	C_{52}	C_{51}	C_{36}	C_{40}
B_{36}	D_{02}	C_{42}	C_{69}	C_{44}	D_{03}	C_{46}	C_{70}	C_{48}	C_{26}	C_{30}	C_{51}	C_{52}	C_{32}	C_{28}	C_{34}	C_{38}
B_{37}	D_{02}	C_{44}	C_{69}	C_{42}	D_{03}	C_{48}	C_{70}	C_{46}	C_{28}	C_{32}	C_{51}	C_{52}	C_{30}	C_{26}	C_{36}	C_{40}
B_{38}	D_{02}	C_{69}	C_{42}	C_{44}	D_{03}	C_{70}	C_{46}	C_{48}	C_{51}	C_{52}	C_{26}	C_{30}	C_{32}	C_{28}	C_{57}	C_{58}
B_{39}	D_{02}	C_{69}	C_{44}	C_{42}	D_{03}	C_{70}	C_{48}	C_{46}	C_{51}	C_{52}	C_{28}	C_{32}	C_{30}	C_{26}	C_{57}	C_{58}
B_{40}	D_{02}	C_{43}	C_{44}	C_{67}	D_{03}	C_{47}	C_{48}	C_{68}	C_{27}	C_{31}	C_{28}	C_{32}	C_{50}	C_{49}	C_{35}	C_{39}
B_{41}	D_{02}	C_{44}	C_{43}	C_{67}	D_{03}	C_{48}	C_{47}	C_{68}	C_{28}	C_{32}	C_{27}	C_{31}	C_{50}	C_{49}	C_{36}	C_{40}
B_{42}	D_{02}	C_{43}	C_{67}	C_{44}	D_{03}	C_{47}	C_{68}	C_{48}	C_{27}	C_{31}	C_{49}	C_{50}	C_{32}	C_{28}	C_{35}	C_{39}
B_{43}	D_{02}	C_{44}	C_{67}	C_{43}	D_{03}	C_{48}	C_{68}	C_{47}	C_{28}	C_{32}	C_{49}	C_{50}	C_{31}	C_{27}	C_{36}	C_{40}
B_{44}	D_{02}	C_{67}	C_{43}	C_{44}	D_{03}	C_{68}	C_{47}	C_{48}	C_{49}	C_{50}	C_{27}	C_{31}	C_{32}	C_{28}	C_{55}	C_{56}
B_{45}	D_{02}	C_{67}	C_{44}	C_{43}	D_{03}	C_{68}	C_{48}	C_{47}	C_{49}	C_{50}	C_{28}	C_{32}	C_{31}	C_{27}	C_{55}	C_{56}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{57}	C_{58}	C_{59}	C_{60}	C_{61}	C_{62}	C_{63}	C_{64}	C_{65}	C_{66}	C_{67}	C_{68}	C_{69}	C_{70}	C_{71}	C_{72}
B_{22}	C_{35}	C_{39}	C_{59}	C_{60}	C_{04}	C_{08}	C_{05}	C_{09}	C_{65}	C_{66}	C_{42}	C_{46}	C_{43}	C_{47}	C_{71}	C_{72}
B_{23}	C_{34}	C_{38}	C_{59}	C_{60}	C_{05}	C_{09}	C_{04}	C_{08}	C_{65}	C_{66}	C_{43}	C_{47}	C_{42}	C_{46}	C_{71}	C_{72}
B_{24}	C_{60}	C_{59}	C_{39}	C_{35}	C_{04}	C_{08}	C_{66}	C_{65}	C_{09}	C_{05}	C_{42}	C_{46}	C_{72}	C_{71}	C_{47}	C_{43}
B_{25}	C_{60}	C_{59}	C_{38}	C_{34}	C_{05}	C_{09}	C_{66}	C_{65}	C_{08}	C_{04}	C_{43}	C_{47}	C_{72}	C_{71}	C_{46}	C_{42}
B_{26}	C_{34}	C_{38}	C_{39}	C_{35}	C_{66}	C_{65}	C_{04}	C_{08}	C_{09}	C_{05}	C_{72}	C_{71}	C_{42}	C_{46}	C_{47}	C_{43}
B_{27}	C_{35}	C_{39}	C_{38}	C_{34}	C_{66}	C_{65}	C_{05}	C_{09}	C_{08}	C_{04}	C_{72}	C_{71}	C_{43}	C_{47}	C_{46}	C_{42}
B_{28}	C_{36}	C_{40}	C_{60}	C_{59}	C_{01}	C_{07}	C_{06}	C_{10}	C_{66}	C_{65}	C_{41}	C_{45}	C_{44}	C_{48}	C_{72}	C_{71}
B_{29}	C_{33}	C_{37}	C_{60}	C_{59}	C_{06}	C_{10}	C_{01}	C_{07}	C_{66}	C_{65}	C_{44}	C_{48}	C_{41}	C_{45}	C_{72}	C_{71}
B_{30}	C_{59}	C_{60}	C_{40}	C_{36}	C_{01}	C_{07}	C_{65}	C_{66}	C_{10}	C_{06}	C_{41}	C_{45}	C_{71}	C_{72}	C_{48}	C_{44}
B_{31}	C_{59}	C_{60}	C_{37}	C_{33}	C_{06}	C_{10}	C_{65}	C_{66}	C_{07}	C_{01}	C_{44}	C_{48}	C_{71}	C_{72}	C_{45}	C_{41}
B_{32}	C_{33}	C_{37}	C_{40}	C_{36}	C_{65}	C_{66}	C_{01}	C_{07}	C_{10}	C_{06}	C_{71}	C_{72}	C_{41}	C_{45}	C_{48}	C_{44}
B_{33}	C_{36}	C_{40}	C_{37}	C_{33}	C_{65}	C_{66}	C_{06}	C_{10}	C_{07}	C_{01}	C_{71}	C_{72}	C_{44}	C_{48}	C_{45}	C_{41}
B_{34}	C_{36}	C_{40}	C_{58}	C_{57}	C_{04}	C_{08}	C_{06}	C_{10}	C_{64}	C_{63}	C_{42}	C_{46}	C_{44}	C_{48}	C_{70}	C_{69}
B_{35}	C_{34}	C_{38}	C_{58}	C_{57}	C_{06}	C_{10}	C_{04}	C_{08}	C_{64}	C_{63}	C_{44}	C_{48}	C_{42}	C_{46}	C_{70}	C_{69}
B_{36}	C_{57}	C_{58}	C_{40}	C_{36}	C_{04}	C_{08}	C_{63}	C_{64}	C_{10}	C_{06}	C_{42}	C_{46}	C_{69}	C_{70}	C_{48}	C_{44}
B_{37}	C_{57}	C_{58}	C_{38}	C_{34}	C_{06}	C_{10}	C_{63}	C_{64}	C_{08}	C_{04}	C_{44}	C_{48}	C_{69}	C_{70}	C_{46}	C_{42}
B_{38}	C_{34}	C_{38}	C_{40}	C_{36}	C_{63}	C_{64}	C_{04}	C_{08}	C_{10}	C_{06}	C_{69}	C_{70}	C_{42}	C_{46}	C_{48}	C_{44}
B_{39}	C_{36}	C_{40}	C_{38}	C_{34}	C_{63}	C_{64}	C_{06}	C_{10}	C_{08}	C_{04}	C_{69}	C_{70}	C_{44}	C_{48}	C_{46}	C_{42}
B_{40}	C_{36}	C_{40}	C_{56}	C_{55}	C_{05}	C_{09}	C_{06}	C_{10}	C_{62}	C_{61}	C_{43}	C_{47}	C_{44}	C_{48}	C_{68}	C_{67}
B_{41}	C_{35}	C_{39}	C_{56}	C_{55}	C_{06}	C_{10}	C_{05}	C_{09}	C_{62}	C_{61}	C_{44}	C_{48}	C_{43}	C_{47}	C_{68}	C_{67}
B_{42}	C_{55}	C_{56}	C_{40}	C_{36}	C_{05}	C_{09}	C_{61}	C_{62}	C_{10}	C_{06}	C_{43}	C_{47}	C_{67}	C_{68}	C_{48}	C_{44}
B_{43}	C_{55}	C_{56}	C_{39}	C_{35}	C_{06}	C_{10}	C_{61}	C_{62}	C_{09}	C_{05}	C_{44}	C_{48}	C_{67}	C_{68}	C_{47}	C_{43}
B_{44}	C_{35}	C_{39}	C_{40}	C_{36}	C_{61}	C_{62}	C_{05}	C_{09}	C_{10}	C_{06}	C_{67}	C_{68}	C_{43}	C_{47}	C_{48}	C_{44}
B_{45}	C_{36}	C_{40}	C_{39}	C_{35}	C_{61}	C_{62}	C_{06}	C_{10}	C_{09}	C_{05}	C_{67}	C_{68}	C_{44}	C_{48}	C_{47}	C_{43}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{22}	C_{11}	C_{15}	C_{12}	C_{16}	C_{77}	C_{78}	C_{18}	C_{22}	C_{19}	C_{23}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{23}	C_{12}	C_{16}	C_{11}	C_{15}	C_{77}	C_{78}	C_{19}	C_{23}	C_{18}	C_{22}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{24}	C_{11}	C_{15}	C_{78}	C_{77}	C_{16}	C_{12}	C_{18}	C_{22}	C_{84}	C_{83}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{25}	C_{12}	C_{16}	C_{78}	C_{77}	C_{15}	C_{11}	C_{19}	C_{23}	C_{84}	C_{83}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{26}	C_{78}	C_{77}	C_{11}	C_{15}	C_{16}	C_{12}	C_{84}	C_{83}	C_{18}	C_{22}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{27}	C_{78}	C_{77}	C_{12}	C_{16}	C_{15}	C_{11}	C_{84}	C_{83}	C_{19}	C_{23}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{28}	C_{02}	C_{14}	C_{13}	C_{17}	C_{78}	C_{77}	C_{03}	C_{21}	C_{20}	C_{24}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{29}	C_{13}	C_{17}	C_{02}	C_{14}	C_{78}	C_{77}	C_{20}	C_{24}	C_{03}	C_{21}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{30}	C_{02}	C_{14}	C_{77}	C_{78}	C_{17}	C_{13}	C_{03}	C_{21}	C_{83}	C_{84}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{31}	C_{13}	C_{17}	C_{77}	C_{78}	C_{14}	C_{02}	C_{20}	C_{24}	C_{83}	C_{84}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{32}	C_{77}	C_{78}	C_{02}	C_{14}	C_{17}	C_{13}	C_{83}	C_{84}	C_{03}	C_{21}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{33}	C_{77}	C_{78}	C_{13}	C_{17}	C_{14}	C_{02}	C_{83}	C_{84}	C_{20}	C_{24}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{34}	C_{11}	C_{15}	C_{13}	C_{17}	C_{76}	C_{75}	C_{18}	C_{22}	C_{20}	C_{24}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{35}	C_{13}	C_{17}	C_{11}	C_{15}	C_{76}	C_{75}	C_{20}	C_{24}	C_{18}	C_{22}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{36}	C_{11}	C_{15}	C_{75}	C_{76}	C_{17}	C_{13}	C_{18}	C_{22}	C_{81}	C_{82}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{37}	C_{13}	C_{17}	C_{75}	C_{76}	C_{15}	C_{11}	C_{20}	C_{24}	C_{81}	C_{82}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{38}	C_{75}	C_{76}	C_{11}	C_{15}	C_{17}	C_{13}	C_{81}	C_{82}	C_{18}	C_{22}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{39}	C_{75}	C_{76}	C_{13}	C_{17}	C_{15}	C_{11}	C_{81}	C_{82}	C_{20}	C_{24}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{40}	C_{12}	C_{16}	C_{13}	C_{17}	C_{74}	C_{73}	C_{19}	C_{23}	C_{20}	C_{24}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{41}	C_{13}	C_{17}	C_{12}	C_{16}	C_{74}	C_{73}	C_{20}	C_{24}	C_{19}	C_{23}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{42}	C_{12}	C_{16}	C_{73}	C_{74}	C_{17}	C_{13}	C_{19}	C_{23}	C_{79}	C_{80}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{43}	C_{13}	C_{17}	C_{73}	C_{74}	C_{16}	C_{12}	C_{20}	C_{24}	C_{79}	C_{80}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{44}	C_{73}	C_{74}	C_{12}	C_{16}	C_{17}	C_{13}	C_{79}	C_{80}	C_{19}	C_{23}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
B'_{45}	C_{73}	C_{74}	C_{13}	C_{17}	C_{16}	C_{12}	C_{79}	C_{80}	C_{20}	C_{24}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
C_{01}	C_{01}	C_{01}	C_{02}	C_{02}	C_{03}	C_{03}	C_{33}	C_{33}	C_{25}	C_{25}	C_{41}	C_{41}	C_{29}	C_{29}	C_{45}	C_{45}
C_{02}	C_{02}	C_{03}	C_{01}	C_{03}	C_{01}	C_{02}	C_{41}	C_{21}	C_{45}	C_{14}	C_{33}	C_{21}	C_{37}	C_{07}	C_{25}	C_{14}
C_{03}	C_{03}	C_{02}	C_{03}	C_{01}	C_{02}	C_{01}	C_{21}	C_{41}	C_{14}	C_{45}	C_{21}	C_{33}	C_{07}	C_{37}	C_{14}	C_{25}
C_{04}	C_{04}	C_{04}	C_{11}	C_{11}	C_{18}	C_{18}	C_{34}	C_{34}	C_{26}	C_{26}	C_{42}	C_{42}	C_{30}	C_{30}	C_{46}	C_{46}
C_{05}	C_{05}	C_{05}	C_{12}	C_{12}	C_{19}	C_{19}	C_{35}	C_{35}	C_{27}	C_{27}	C_{43}	C_{43}	C_{31}	C_{31}	C_{47}	C_{47}
C_{06}	C_{06}	C_{06}	C_{13}	C_{13}	C_{20}	C_{20}	C_{36}	C_{36}	C_{28}	C_{28}	C_{44}	C_{44}	C_{32}	C_{32}	C_{48}	C_{48}
C_{07}	C_{07}	C_{07}	C_{14}	C_{14}	C_{21}	C_{21}	C_{37}	C_{37}	C_{29}	C_{29}	C_{45}	C_{45}	C_{25}	C_{25}	C_{41}	C_{41}
C_{08}	C_{08}	C_{08}	C_{15}	C_{15}	C_{22}	C_{22}	C_{38}	C_{38}	C_{30}	C_{30}	C_{46}	C_{46}	C_{26}	C_{26}	C_{42}	C_{42}
C_{09}	C_{09}	C_{09}	C_{16}	C_{16}	C_{23}	C_{23}	C_{39}	C_{39}	C_{31}	C_{31}	C_{47}	C_{47}	C_{27}	C_{27}	C_{43}	C_{43}
C_{10}	C_{10}	C_{10}	C_{17}	C_{17}	C_{24}	C_{24}	C_{40}	C_{40}	C_{32}	C_{32}	C_{48}	C_{48}	C_{28}	C_{28}	C_{44}	C_{44}
C_{11}	C_{11}	C_{18}	C_{04}	C_{18}	C_{04}	C_{11}	C_{42}	C_{22}	C_{46}	C_{15}	C_{34}	C_{22}	C_{38}	C_{08}	C_{26}	C_{15}
C_{12}	C_{12}	C_{19}	C_{05}	C_{19}	C_{05}	C_{12}	C_{43}	C_{23}	C_{47}	C_{16}	C_{35}	C_{23}	C_{39}	C_{09}	C_{27}	C_{16}
C_{13}	C_{13}	C_{20}	C_{06}	C_{20}	C_{06}	C_{13}	C_{44}	C_{24}	C_{48}	C_{17}	C_{36}	C_{24}	C_{40}	C_{10}	C_{28}	C_{17}
C_{14}	C_{14}	C_{21}	C_{07}	C_{21}	C_{07}	C_{14}	C_{45}	C_{03}	C_{41}	C_{02}	C_{37}	C_{03}	C_{33}	C_{01}	C_{29}	C_{02}
C_{15}	C_{15}	C_{22}	C_{08}	C_{22}	C_{08}	C_{15}	C_{46}	C_{18}	C_{42}	C_{11}	C_{38}	C_{18}	C_{34}	C_{04}	C_{30}	C_{11}
C_{16}	C_{16}	C_{23}	C_{09}	C_{23}	C_{09}	C_{16}	C_{47}	C_{19}	C_{43}	C_{12}	C_{39}	C_{19}	C_{35}	C_{05}	C_{31}	C_{12}
C_{17}	C_{17}	C_{24}	C_{10}	C_{24}	C_{10}	C_{17}	C_{48}	C_{20}	C_{44}	C_{13}	C_{40}	C_{20}	C_{36}	C_{06}	C_{32}	C_{13}
C_{18}	C_{18}	C_{11}	C_{18}	C_{04}	C_{11}	C_{04}	C_{22}	C_{42}	C_{15}	C_{46}	C_{22}	C_{34}	C_{08}	C_{38}	C_{15}	C_{26}
C_{19}	C_{19}	C_{12}	C_{19}	C_{05}	C_{12}	C_{05}	C_{23}	C_{43}	C_{16}	C_{47}	C_{23}	C_{35}	C_{09}	C_{39}	C_{16}	C_{27}
C_{20}	C_{20}	C_{13}	C_{20}	C_{06}	C_{13}	C_{06}	C_{24}	C_{44}	C_{17}	C_{48}	C_{24}	C_{36}	C_{10}	C_{40}	C_{17}	C_{28}
C_{21}	C_{21}	C_{14}	C_{21}	C_{07}	C_{14}	C_{07}	C_{03}	C_{45}	C_{02}	C_{41}	C_{03}	C_{37}	C_{01}	C_{33}	C_{02}	C_{29}
C_{22}	C_{22}	C_{15}	C_{22}	C_{08}	C_{15}	C_{08}	C_{18}	C_{46}	C_{11}	C_{42}	C_{18}	C_{38}	C_{04}	C_{34}	C_{11}	C_{30}
C_{23}	C_{23}	C_{16}	C_{23}	C_{09}	C_{16}	C_{09}	C_{19}	C_{47}	C_{12}	C_{43}	C_{19}	C_{39}	C_{05}	C_{35}	C_{12}	C_{31}
C_{24}	C_{24}	C_{17}	C_{24}	C_{10}	C_{17}	C_{10}	C_{20}	C_{48}	C_{13}	C_{44}	C_{20}	C_{40}	C_{06}	C_{36}	C_{13}	C_{32}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
C_{01}	c_{37}	c_{37}	c_{21}	c_{14}	c_{21}	c_{14}	c_{07}	c_{07}	c_{01}	c_{01}	c_{01}	c_{02}	c_{02}	c_{02}	c_{01}	c_{01}
C_{02}	c_{29}	c_{07}	c_{33}	c_{25}	c_{41}	c_{45}	c_{29}	c_{37}	c_{02}	c_{02}	c_{01}	c_{02}	c_{01}	c_{01}	c_{03}	c_{01}
C_{03}	c_{07}	c_{29}	c_{41}	c_{45}	c_{33}	c_{25}	c_{37}	c_{29}	c_{02}	c_{01}	c_{02}	c_{01}	c_{01}	c_{02}	c_{03}	c_{03}
C_{04}	c_{38}	c_{38}	c_{22}	c_{15}	c_{22}	c_{15}	c_{08}	c_{08}	c_{04}	c_{04}	c_{04}	c_{11}	c_{11}	c_{11}	c_{04}	c_{04}
C_{05}	c_{39}	c_{39}	c_{23}	c_{16}	c_{23}	c_{16}	c_{09}	c_{09}	c_{05}	c_{05}	c_{05}	c_{12}	c_{12}	c_{12}	c_{05}	c_{05}
C_{06}	c_{40}	c_{40}	c_{24}	c_{17}	c_{24}	c_{17}	c_{10}	c_{10}	c_{06}	c_{06}	c_{06}	c_{13}	c_{13}	c_{13}	c_{06}	c_{06}
C_{07}	c_{33}	c_{33}	c_{03}	c_{02}	c_{03}	c_{02}	c_{01}	c_{01}	c_{07}	c_{07}	c_{07}	c_{14}	c_{14}	c_{14}	c_{07}	c_{07}
C_{08}	c_{34}	c_{34}	c_{18}	c_{11}	c_{18}	c_{11}	c_{04}	c_{04}	c_{08}	c_{08}	c_{08}	c_{15}	c_{15}	c_{15}	c_{08}	c_{08}
C_{09}	c_{35}	c_{35}	c_{19}	c_{12}	c_{19}	c_{12}	c_{05}	c_{05}	c_{09}	c_{09}	c_{09}	c_{16}	c_{16}	c_{16}	c_{09}	c_{09}
C_{10}	c_{36}	c_{36}	c_{20}	c_{13}	c_{20}	c_{13}	c_{06}	c_{06}	c_{10}	c_{10}	c_{10}	c_{17}	c_{17}	c_{17}	c_{10}	c_{10}
C_{11}	c_{30}	c_{08}	c_{34}	c_{26}	c_{42}	c_{46}	c_{30}	c_{38}	c_{11}	c_{11}	c_{04}	c_{11}	c_{04}	c_{04}	c_{18}	c_{04}
C_{12}	c_{31}	c_{09}	c_{35}	c_{27}	c_{43}	c_{47}	c_{31}	c_{39}	c_{12}	c_{12}	c_{05}	c_{12}	c_{05}	c_{05}	c_{19}	c_{05}
C_{13}	c_{32}	c_{10}	c_{36}	c_{28}	c_{44}	c_{48}	c_{32}	c_{40}	c_{13}	c_{13}	c_{06}	c_{13}	c_{06}	c_{06}	c_{20}	c_{06}
C_{14}	c_{25}	c_{01}	c_{37}	c_{29}	c_{45}	c_{41}	c_{25}	c_{33}	c_{14}	c_{14}	c_{07}	c_{14}	c_{07}	c_{07}	c_{21}	c_{07}
C_{15}	c_{26}	c_{04}	c_{38}	c_{30}	c_{46}	c_{42}	c_{26}	c_{34}	c_{15}	c_{15}	c_{08}	c_{15}	c_{08}	c_{08}	c_{22}	c_{08}
C_{16}	c_{27}	c_{05}	c_{39}	c_{31}	c_{47}	c_{43}	c_{27}	c_{35}	c_{16}	c_{16}	c_{09}	c_{16}	c_{09}	c_{09}	c_{23}	c_{09}
C_{17}	c_{28}	c_{06}	c_{40}	c_{32}	c_{48}	c_{44}	c_{28}	c_{36}	c_{17}	c_{17}	c_{10}	c_{17}	c_{10}	c_{10}	c_{24}	c_{10}
C_{18}	c_{08}	c_{30}	c_{42}	c_{46}	c_{34}	c_{26}	c_{38}	c_{30}	c_{11}	c_{04}	c_{11}	c_{04}	c_{04}	c_{11}	c_{18}	c_{18}
C_{19}	c_{09}	c_{31}	c_{43}	c_{47}	c_{35}	c_{27}	c_{39}	c_{31}	c_{12}	c_{05}	c_{12}	c_{05}	c_{05}	c_{12}	c_{19}	c_{19}
C_{20}	c_{10}	c_{32}	c_{44}	c_{48}	c_{36}	c_{28}	c_{40}	c_{32}	c_{13}	c_{06}	c_{13}	c_{06}	c_{06}	c_{13}	c_{20}	c_{20}
C_{21}	c_{01}	c_{25}	c_{45}	c_{41}	c_{37}	c_{29}	c_{33}	c_{25}	c_{14}	c_{07}	c_{14}	c_{07}	c_{07}	c_{14}	c_{21}	c_{21}
C_{22}	c_{04}	c_{26}	c_{46}	c_{42}	c_{38}	c_{30}	c_{34}	c_{26}	c_{15}	c_{08}	c_{15}	c_{08}	c_{08}	c_{15}	c_{22}	c_{22}
C_{23}	c_{05}	c_{27}	c_{47}	c_{43}	c_{39}	c_{31}	c_{35}	c_{27}	c_{16}	c_{09}	c_{16}	c_{09}	c_{09}	c_{16}	c_{23}	c_{23}
C_{24}	c_{06}	c_{28}	c_{48}	c_{44}	c_{40}	c_{32}	c_{36}	c_{28}	c_{17}	c_{10}	c_{17}	c_{10}	c_{10}	c_{17}	c_{24}	c_{24}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
C_{01}	c_{01}	c_{03}	c_{03}	c_{03}	c_{03}	c_{02}	c_{03}	c_{02}	c_{02}	c_{03}	c_{25}	c_{29}	c_{14}	c_{07}	c_{25}	c_{29}
C_{02}	c_{03}	c_{01}	c_{01}	c_{03}	c_{02}	c_{02}	c_{02}	c_{03}	c_{03}	c_{03}	c_{25}	c_{29}	c_{14}	c_{07}	c_{14}	c_{07}
C_{03}	c_{01}	c_{03}	c_{01}	c_{01}	c_{03}	c_{03}	c_{02}	c_{02}	c_{03}	c_{02}	c_{14}	c_{07}	c_{25}	c_{29}	c_{25}	c_{29}
C_{04}	c_{04}	c_{18}	c_{18}	c_{18}	c_{18}	c_{11}	c_{18}	c_{11}	c_{11}	c_{18}	c_{26}	c_{30}	c_{15}	c_{08}	c_{26}	c_{30}
C_{05}	c_{05}	c_{19}	c_{19}	c_{19}	c_{19}	c_{12}	c_{19}	c_{12}	c_{12}	c_{19}	c_{27}	c_{31}	c_{16}	c_{09}	c_{27}	c_{31}
C_{06}	c_{06}	c_{20}	c_{20}	c_{20}	c_{20}	c_{13}	c_{20}	c_{13}	c_{13}	c_{20}	c_{28}	c_{32}	c_{17}	c_{10}	c_{28}	c_{32}
C_{07}	c_{07}	c_{21}	c_{21}	c_{21}	c_{21}	c_{14}	c_{21}	c_{14}	c_{14}	c_{21}	c_{29}	c_{25}	c_{02}	c_{01}	c_{29}	c_{25}
C_{08}	c_{08}	c_{22}	c_{22}	c_{22}	c_{22}	c_{15}	c_{22}	c_{15}	c_{15}	c_{22}	c_{30}	c_{26}	c_{11}	c_{04}	c_{30}	c_{26}
C_{09}	c_{09}	c_{23}	c_{23}	c_{23}	c_{23}	c_{16}	c_{23}	c_{16}	c_{16}	c_{23}	c_{31}	c_{27}	c_{12}	c_{05}	c_{31}	c_{27}
C_{10}	c_{10}	c_{24}	c_{24}	c_{24}	c_{24}	c_{17}	c_{24}	c_{17}	c_{17}	c_{24}	c_{32}	c_{28}	c_{13}	c_{06}	c_{32}	c_{28}
C_{11}	c_{18}	c_{04}	c_{04}	c_{18}	c_{11}	c_{11}	c_{11}	c_{18}	c_{18}	c_{18}	c_{26}	c_{30}	c_{15}	c_{08}	c_{15}	c_{08}
C_{12}	c_{19}	c_{05}	c_{05}	c_{19}	c_{12}	c_{12}	c_{12}	c_{19}	c_{19}	c_{19}	c_{27}	c_{31}	c_{16}	c_{09}	c_{16}	c_{09}
C_{13}	c_{20}	c_{06}	c_{06}	c_{20}	c_{13}	c_{13}	c_{13}	c_{20}	c_{20}	c_{20}	c_{28}	c_{32}	c_{17}	c_{10}	c_{17}	c_{10}
C_{14}	c_{21}	c_{07}	c_{07}	c_{21}	c_{14}	c_{14}	c_{14}	c_{21}	c_{21}	c_{21}	c_{29}	c_{25}	c_{02}	c_{01}	c_{02}	c_{01}
C_{15}	c_{22}	c_{08}	c_{08}	c_{22}	c_{15}	c_{15}	c_{15}	c_{22}	c_{22}	c_{22}	c_{30}	c_{26}	c_{11}	c_{04}	c_{11}	c_{04}
C_{16}	c_{23}	c_{09}	c_{09}	c_{23}	c_{16}	c_{16}	c_{16}	c_{23}	c_{23}	c_{23}	c_{31}	c_{27}	c_{12}	c_{05}	c_{12}	c_{05}
C_{17}	c_{24}	c_{10}	c_{10}	c_{24}	c_{17}	c_{17}	c_{17}	c_{24}	c_{24}	c_{24}	c_{32}	c_{28}	c_{13}	c_{06}	c_{13}	c_{06}
C_{18}	c_{04}	c_{18}	c_{04}	c_{04}	c_{18}	c_{18}	c_{11}	c_{11}	c_{18}	c_{11}	c_{15}	c_{08}	c_{26}	c_{30}	c_{26}	c_{30}
C_{19}	c_{05}	c_{19}	c_{05}	c_{05}	c_{19}	c_{19}	c_{12}	c_{12}	c_{19}	c_{12}	c_{16}	c_{09}	c_{27}	c_{31}	c_{27}	c_{31}
C_{20}	c_{06}	c_{20}	c_{06}	c_{06}	c_{20}	c_{20}	c_{13}	c_{13}	c_{20}	c_{13}	c_{17}	c_{10}	c_{28}	c_{32}	c_{28}	c_{32}
C_{21}	c_{07}	c_{21}	c_{07}	c_{07}	c_{21}	c_{21}	c_{14}	c_{14}	c_{21}	c_{14}	c_{02}	c_{01}	c_{29}	c_{25}	c_{29}	c_{25}
C_{22}	c_{08}	c_{22}	c_{08}	c_{08}	c_{22}	c_{22}	c_{15}	c_{15}	c_{22}	c_{15}	c_{11}	c_{04}	c_{30}	c_{26}	c_{30}	c_{26}
C_{23}	c_{09}	c_{23}	c_{09}	c_{09}	c_{23}	c_{23}	c_{16}	c_{16}	c_{23}	c_{16}	c_{12}	c_{05}	c_{31}	c_{27}	c_{31}	c_{27}
C_{24}	c_{10}	c_{24}	c_{10}	c_{10}	c_{24}	c_{24}	c_{17}	c_{17}	c_{24}	c_{17}	c_{13}	c_{06}	c_{32}	c_{28}	c_{32}	c_{28}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
C_{01}	C_{14}	C_{07}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{14}	C_{07}	C_{25}	C_{29}	C_{29}	C_{07}	C_{25}	C_{14}
C_{02}	C_{25}	C_{29}	C_{29}	C_{07}	C_{25}	C_{14}	C_{01}	C_{02}	C_{25}	C_{29}	C_{14}	C_{07}	D_{01}	D_{01}	D_{02}	D_{02}
C_{03}	C_{14}	C_{07}	C_{07}	C_{29}	C_{14}	C_{25}	C_{02}	C_{01}	C_{25}	C_{29}	C_{14}	C_{07}	C_{07}	C_{29}	C_{14}	C_{25}
C_{04}	C_{15}	C_{08}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{15}	C_{08}	C_{26}	C_{30}	C_{30}	C_{08}	C_{26}	C_{15}
C_{05}	C_{16}	C_{09}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{16}	C_{09}	C_{27}	C_{31}	C_{31}	C_{09}	C_{27}	C_{16}
C_{06}	C_{17}	C_{10}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{17}	C_{10}	C_{28}	C_{32}	C_{32}	C_{10}	C_{28}	C_{17}
C_{07}	C_{02}	C_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{02}	C_{01}	C_{29}	C_{25}	C_{25}	C_{01}	C_{29}	C_{02}
C_{08}	C_{11}	C_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{11}	C_{04}	C_{30}	C_{26}	C_{26}	C_{04}	C_{30}	C_{11}
C_{09}	C_{12}	C_{05}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{12}	C_{05}	C_{31}	C_{27}	C_{27}	C_{05}	C_{31}	C_{12}
C_{10}	C_{13}	C_{06}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{13}	C_{06}	C_{32}	C_{28}	C_{28}	C_{06}	C_{32}	C_{13}
C_{11}	C_{26}	C_{30}	C_{30}	C_{08}	C_{26}	C_{15}	C_{04}	C_{11}	C_{26}	C_{30}	C_{15}	C_{08}	D_{01}	D_{01}	D_{02}	D_{02}
C_{12}	C_{27}	C_{31}	C_{31}	C_{09}	C_{27}	C_{16}	C_{05}	C_{12}	C_{27}	C_{31}	C_{16}	C_{09}	D_{01}	D_{01}	D_{02}	D_{02}
C_{13}	C_{28}	C_{32}	C_{32}	C_{10}	C_{28}	C_{17}	C_{06}	C_{13}	C_{28}	C_{32}	C_{17}	C_{10}	D_{01}	D_{01}	D_{02}	D_{02}
C_{14}	C_{29}	C_{25}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	C_{29}	C_{25}	C_{02}	C_{01}	D_{01}	D_{01}	D_{02}	D_{02}
C_{15}	C_{30}	C_{26}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	C_{30}	C_{26}	C_{11}	C_{04}	D_{01}	D_{01}	D_{02}	D_{02}
C_{16}	C_{31}	C_{27}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	C_{31}	C_{27}	C_{12}	C_{05}	D_{01}	D_{01}	D_{02}	D_{02}
C_{17}	C_{32}	C_{28}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	C_{32}	C_{28}	C_{13}	C_{06}	D_{01}	D_{01}	D_{02}	D_{02}
C_{18}	C_{15}	C_{08}	C_{08}	C_{30}	C_{15}	C_{26}	C_{11}	C_{04}	C_{26}	C_{30}	C_{15}	C_{08}	C_{08}	C_{30}	C_{15}	C_{26}
C_{19}	C_{16}	C_{09}	C_{09}	C_{31}	C_{16}	C_{27}	C_{12}	C_{05}	C_{27}	C_{31}	C_{16}	C_{09}	C_{09}	C_{31}	C_{16}	C_{27}
C_{20}	C_{17}	C_{10}	C_{10}	C_{32}	C_{17}	C_{28}	C_{13}	C_{06}	C_{28}	C_{32}	C_{17}	C_{10}	C_{10}	C_{32}	C_{17}	C_{28}
C_{21}	C_{02}	C_{01}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	C_{29}	C_{25}	C_{02}	C_{01}	C_{01}	C_{25}	C_{02}	C_{29}
C_{22}	C_{11}	C_{04}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	C_{30}	C_{26}	C_{11}	C_{04}	C_{04}	C_{26}	C_{11}	C_{30}
C_{23}	C_{12}	C_{05}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	C_{31}	C_{27}	C_{12}	C_{05}	C_{05}	C_{27}	C_{12}	C_{31}
C_{24}	C_{13}	C_{06}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	C_{32}	C_{28}	C_{13}	C_{06}	C_{06}	C_{28}	C_{13}	C_{32}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
C_{01}	C_{01}	C_{02}	C_{29}	C_{07}	C_{25}	C_{14}	C_{01}	C_{02}	C_{21}	C_{07}	C_{21}	C_{07}	C_{33}	C_{37}	C_{33}	C_{37}
C_{02}	D_{04}	D_{04}	C_{07}	C_{29}	C_{14}	C_{25}	C_{02}	C_{01}	C_{21}	C_{07}	C_{33}	C_{37}	C_{21}	C_{07}	C_{33}	C_{37}
C_{03}	C_{02}	C_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{33}	C_{37}	C_{21}	C_{07}	C_{33}	C_{37}	C_{21}	C_{07}
C_{04}	C_{04}	C_{11}	C_{30}	C_{08}	C_{26}	C_{15}	C_{04}	C_{11}	C_{22}	C_{08}	C_{22}	C_{08}	C_{34}	C_{38}	C_{34}	C_{38}
C_{05}	C_{05}	C_{12}	C_{31}	C_{09}	C_{27}	C_{16}	C_{05}	C_{12}	C_{23}	C_{09}	C_{23}	C_{09}	C_{35}	C_{39}	C_{35}	C_{39}
C_{06}	C_{06}	C_{13}	C_{32}	C_{10}	C_{28}	C_{17}	C_{06}	C_{13}	C_{24}	C_{10}	C_{24}	C_{10}	C_{36}	C_{40}	C_{36}	C_{40}
C_{07}	C_{07}	C_{14}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	C_{03}	C_{01}	C_{03}	C_{01}	C_{37}	C_{33}	C_{37}	C_{33}
C_{08}	C_{08}	C_{15}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	C_{18}	C_{04}	C_{18}	C_{04}	C_{38}	C_{34}	C_{38}	C_{34}
C_{09}	C_{09}	C_{16}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	C_{19}	C_{05}	C_{19}	C_{05}	C_{39}	C_{35}	C_{39}	C_{35}
C_{10}	C_{10}	C_{17}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	C_{20}	C_{06}	C_{20}	C_{06}	C_{40}	C_{36}	C_{40}	C_{36}
C_{11}	D_{04}	D_{04}	C_{08}	C_{30}	C_{15}	C_{26}	C_{11}	C_{04}	C_{22}	C_{08}	C_{34}	C_{38}	C_{22}	C_{08}	C_{34}	C_{38}
C_{12}	D_{04}	D_{04}	C_{09}	C_{31}	C_{16}	C_{27}	C_{12}	C_{05}	C_{23}	C_{09}	C_{35}	C_{39}	C_{23}	C_{09}	C_{35}	C_{39}
C_{13}	D_{04}	D_{04}	C_{10}	C_{32}	C_{17}	C_{28}	C_{13}	C_{06}	C_{24}	C_{10}	C_{36}	C_{40}	C_{24}	C_{10}	C_{36}	C_{40}
C_{14}	D_{04}	D_{04}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	C_{03}	C_{01}	C_{37}	C_{33}	C_{03}	C_{01}	C_{37}	C_{33}
C_{15}	D_{04}	D_{04}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	C_{18}	C_{04}	C_{38}	C_{34}	C_{18}	C_{04}	C_{38}	C_{34}
C_{16}	D_{04}	D_{04}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	C_{19}	C_{05}	C_{39}	C_{35}	C_{19}	C_{05}	C_{39}	C_{35}
C_{17}	D_{04}	D_{04}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	C_{20}	C_{06}	C_{40}	C_{36}	C_{20}	C_{06}	C_{40}	C_{36}
C_{18}	C_{11}	C_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{34}	C_{38}	C_{22}	C_{08}	C_{34}	C_{38}	C_{22}	C_{08}
C_{19}	C_{12}	C_{05}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{35}	C_{39}	C_{23}	C_{09}	C_{35}	C_{39}	C_{23}	C_{09}
C_{20}	C_{13}	C_{06}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{36}	C_{40}	C_{24}	C_{10}	C_{36}	C_{40}	C_{24}	C_{10}
C_{21}	C_{14}	C_{07}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{37}	C_{33}	C_{03}	C_{01}	C_{37}	C_{33}	C_{03}	C_{01}
C_{22}	C_{15}	C_{08}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{38}	C_{34}	C_{18}	C_{04}	C_{38}	C_{34}	C_{18}	C_{04}
C_{23}	C_{16}	C_{09}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{39}	C_{35}	C_{19}	C_{05}	C_{39}	C_{35}	C_{19}	C_{05}
C_{24}	C_{17}	C_{10}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{40}	C_{36}	C_{20}	C_{06}	C_{40}	C_{36}	C_{20}	C_{06}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
C_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{21}	C_{07}	C_{33}	C_{37}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}
C_{02}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}	C_{33}	C_{37}	C_{21}	C_{07}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{03}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}	C_{33}	C_{37}	C_{21}	C_{07}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}
C_{04}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{22}	C_{08}	C_{34}	C_{38}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}
C_{05}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{23}	C_{09}	C_{35}	C_{39}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}
C_{06}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{24}	C_{10}	C_{36}	C_{40}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}
C_{07}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{03}	C_{01}	C_{37}	C_{33}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
C_{08}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{18}	C_{04}	C_{38}	C_{34}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
C_{09}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{19}	C_{05}	C_{39}	C_{35}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
C_{10}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{20}	C_{06}	C_{40}	C_{36}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
C_{11}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}	C_{34}	C_{38}	C_{22}	C_{08}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{12}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}	C_{35}	C_{39}	C_{23}	C_{09}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{13}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}	C_{36}	C_{40}	C_{24}	C_{10}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{14}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	C_{37}	C_{33}	C_{03}	C_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{15}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	C_{38}	C_{34}	C_{18}	C_{04}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{16}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	C_{39}	C_{35}	C_{19}	C_{05}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{17}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	C_{40}	C_{36}	C_{20}	C_{06}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{18}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}	C_{34}	C_{38}	C_{22}	C_{08}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}
C_{19}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}	C_{35}	C_{39}	C_{23}	C_{09}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}
C_{20}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}	C_{36}	C_{40}	C_{24}	C_{10}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}
C_{21}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	C_{37}	C_{33}	C_{03}	C_{01}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
C_{22}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	C_{38}	C_{34}	C_{18}	C_{04}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
C_{23}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	C_{39}	C_{35}	C_{19}	C_{05}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
C_{24}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	C_{40}	C_{36}	C_{20}	C_{06}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
C_{01}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}	C_{41}	C_{45}	C_{21}	C_{14}	C_{41}	C_{45}	C_{21}	C_{14}	D_{02}	D_{02}
C_{02}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}	C_{41}	C_{45}	C_{21}	C_{14}	C_{21}	C_{14}	C_{41}	C_{45}	C_{45}	C_{14}
C_{03}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{21}	C_{14}	C_{41}	C_{45}	C_{41}	C_{45}	C_{21}	C_{14}	C_{14}	C_{45}
C_{04}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}	C_{42}	C_{46}	C_{22}	C_{15}	C_{42}	C_{46}	C_{22}	C_{15}	D_{02}	D_{02}
C_{05}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}	C_{43}	C_{47}	C_{23}	C_{16}	C_{43}	C_{47}	C_{23}	C_{16}	D_{02}	D_{02}
C_{06}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}	C_{44}	C_{48}	C_{24}	C_{17}	C_{44}	C_{48}	C_{24}	C_{17}	D_{02}	D_{02}
C_{07}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	C_{45}	C_{41}	C_{03}	C_{02}	C_{45}	C_{41}	C_{03}	C_{02}	D_{02}	D_{02}
C_{08}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	C_{46}	C_{42}	C_{18}	C_{11}	C_{46}	C_{42}	C_{18}	C_{11}	D_{02}	D_{02}
C_{09}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	C_{47}	C_{43}	C_{19}	C_{12}	C_{47}	C_{43}	C_{19}	C_{12}	D_{02}	D_{02}
C_{10}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	C_{48}	C_{44}	C_{20}	C_{13}	C_{48}	C_{44}	C_{20}	C_{13}	D_{02}	D_{02}
C_{11}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}	C_{42}	C_{46}	C_{22}	C_{15}	C_{22}	C_{15}	C_{42}	C_{46}	C_{46}	C_{15}
C_{12}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}	C_{43}	C_{47}	C_{23}	C_{16}	C_{23}	C_{16}	C_{43}	C_{47}	C_{47}	C_{16}
C_{13}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}	C_{44}	C_{48}	C_{24}	C_{17}	C_{24}	C_{17}	C_{44}	C_{48}	C_{48}	C_{17}
C_{14}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	C_{45}	C_{41}	C_{03}	C_{02}	C_{03}	C_{02}	C_{45}	C_{41}	C_{41}	C_{02}
C_{15}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	C_{46}	C_{42}	C_{18}	C_{11}	C_{18}	C_{11}	C_{46}	C_{42}	C_{42}	C_{11}
C_{16}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	C_{47}	C_{43}	C_{19}	C_{12}	C_{19}	C_{12}	C_{47}	C_{43}	C_{43}	C_{12}
C_{17}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	C_{48}	C_{44}	C_{20}	C_{13}	C_{20}	C_{13}	C_{48}	C_{44}	C_{44}	C_{13}
C_{18}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{22}	C_{15}	C_{42}	C_{46}	C_{42}	C_{46}	C_{22}	C_{15}	C_{15}	C_{46}
C_{19}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{23}	C_{16}	C_{43}	C_{47}	C_{43}	C_{47}	C_{23}	C_{16}	C_{16}	C_{47}
C_{20}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{24}	C_{17}	C_{44}	C_{48}	C_{44}	C_{48}	C_{24}	C_{17}	C_{17}	C_{48}
C_{21}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{03}	C_{02}	C_{45}	C_{41}	C_{45}	C_{41}	C_{03}	C_{02}	C_{02}	C_{41}
C_{22}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{18}	C_{11}	C_{46}	C_{42}	C_{46}	C_{42}	C_{18}	C_{11}	C_{11}	C_{42}
C_{23}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{19}	C_{12}	C_{47}	C_{43}	C_{47}	C_{43}	C_{19}	C_{12}	C_{12}	C_{43}
C_{24}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{20}	C_{13}	C_{48}	C_{44}	C_{48}	C_{44}	C_{20}	C_{13}	C_{13}	C_{44}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
C_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{21}	C_{14}	C_{41}	C_{45}	C_{45}	C_{14}	C_{41}	C_{21}	C_{02}	C_{01}	C_{45}	C_{14}
C_{02}	C_{41}	C_{21}	C_{02}	C_{03}	C_{41}	C_{45}	C_{21}	C_{14}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{14}	C_{45}
C_{03}	C_{21}	C_{41}	C_{03}	C_{02}	C_{41}	C_{45}	C_{21}	C_{14}	C_{14}	C_{45}	C_{21}	C_{41}	C_{01}	C_{02}	D_{02}	D_{02}
C_{04}	D_{03}	D_{03}	D_{04}	D_{04}	C_{22}	C_{15}	C_{42}	C_{46}	C_{46}	C_{15}	C_{42}	C_{22}	C_{11}	C_{18}	C_{46}	C_{15}
C_{05}	D_{03}	D_{03}	D_{04}	D_{04}	C_{23}	C_{16}	C_{43}	C_{47}	C_{47}	C_{16}	C_{43}	C_{23}	C_{12}	C_{19}	C_{47}	C_{16}
C_{06}	D_{03}	D_{03}	D_{04}	D_{04}	C_{24}	C_{17}	C_{44}	C_{48}	C_{48}	C_{17}	C_{44}	C_{24}	C_{13}	C_{20}	C_{48}	C_{17}
C_{07}	D_{03}	D_{03}	D_{04}	D_{04}	C_{03}	C_{02}	C_{45}	C_{41}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	C_{41}	C_{02}
C_{08}	D_{03}	D_{03}	D_{04}	D_{04}	C_{18}	C_{11}	C_{46}	C_{42}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	C_{42}	C_{11}
C_{09}	D_{03}	D_{03}	D_{04}	D_{04}	C_{19}	C_{12}	C_{47}	C_{43}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	C_{43}	C_{12}
C_{10}	D_{03}	D_{03}	D_{04}	D_{04}	C_{20}	C_{13}	C_{48}	C_{44}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	C_{44}	C_{13}
C_{11}	C_{42}	C_{22}	C_{11}	C_{18}	C_{42}	C_{46}	C_{22}	C_{15}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{15}	C_{46}
C_{12}	C_{43}	C_{23}	C_{12}	C_{19}	C_{43}	C_{47}	C_{23}	C_{16}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{16}	C_{47}
C_{13}	C_{44}	C_{24}	C_{13}	C_{20}	C_{44}	C_{48}	C_{24}	C_{17}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{17}	C_{48}
C_{14}	C_{45}	C_{03}	C_{14}	C_{21}	C_{45}	C_{41}	C_{03}	C_{02}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{02}	C_{41}
C_{15}	C_{46}	C_{18}	C_{15}	C_{22}	C_{46}	C_{42}	C_{18}	C_{11}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{11}	C_{42}
C_{16}	C_{47}	C_{19}	C_{16}	C_{23}	C_{47}	C_{43}	C_{19}	C_{12}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{12}	C_{43}
C_{17}	C_{48}	C_{20}	C_{17}	C_{24}	C_{48}	C_{44}	C_{20}	C_{13}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{13}	C_{44}
C_{18}	C_{22}	C_{42}	C_{18}	C_{11}	C_{42}	C_{46}	C_{22}	C_{15}	C_{15}	C_{46}	C_{22}	C_{42}	C_{18}	C_{11}	D_{02}	D_{02}
C_{19}	C_{23}	C_{43}	C_{19}	C_{12}	C_{43}	C_{47}	C_{23}	C_{16}	C_{16}	C_{47}	C_{23}	C_{43}	C_{19}	C_{12}	D_{02}	D_{02}
C_{20}	C_{24}	C_{44}	C_{20}	C_{13}	C_{44}	C_{48}	C_{24}	C_{17}	C_{17}	C_{48}	C_{24}	C_{44}	C_{20}	C_{13}	D_{02}	D_{02}
C_{21}	C_{03}	C_{45}	C_{21}	C_{14}	C_{45}	C_{41}	C_{03}	C_{02}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	D_{02}	D_{02}
C_{22}	C_{18}	C_{46}	C_{22}	C_{15}	C_{46}	C_{42}	C_{18}	C_{11}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	D_{02}	D_{02}
C_{23}	C_{19}	C_{47}	C_{23}	C_{16}	C_{47}	C_{43}	C_{19}	C_{12}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	D_{02}	D_{02}
C_{24}	C_{20}	C_{48}	C_{24}	C_{17}	C_{48}	C_{44}	C_{20}	C_{13}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	D_{02}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
C_{01}	C_{41}	C_{21}	C_{14}	C_{01}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
C_{02}	C_{21}	C_{41}	C_{01}	C_{02}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{41}	C_{45}	C_{33}	C_{37}	C_{25}	C_{29}
C_{03}	D_{03}	D_{03}	D_{04}	D_{04}	C_{41}	C_{45}	C_{33}	C_{37}	C_{25}	C_{29}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}
C_{04}	C_{42}	C_{22}	C_{11}	C_{18}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
C_{05}	C_{43}	C_{23}	C_{12}	C_{19}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
C_{06}	C_{44}	C_{24}	C_{13}	C_{20}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
C_{07}	C_{45}	C_{03}	C_{14}	C_{21}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}
C_{08}	C_{46}	C_{18}	C_{15}	C_{22}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}
C_{09}	C_{47}	C_{19}	C_{16}	C_{23}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}
C_{10}	C_{48}	C_{20}	C_{17}	C_{24}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}
C_{11}	C_{22}	C_{42}	C_{18}	C_{11}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{42}	C_{46}	C_{34}	C_{38}	C_{26}	C_{30}
C_{12}	C_{23}	C_{43}	C_{19}	C_{12}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{43}	C_{47}	C_{35}	C_{39}	C_{27}	C_{31}
C_{13}	C_{24}	C_{44}	C_{20}	C_{13}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{44}	C_{48}	C_{36}	C_{40}	C_{28}	C_{32}
C_{14}	C_{03}	C_{45}	C_{21}	C_{14}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	C_{45}	C_{41}	C_{37}	C_{33}	C_{29}	C_{25}
C_{15}	C_{18}	C_{46}	C_{22}	C_{15}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	C_{46}	C_{42}	C_{38}	C_{34}	C_{30}	C_{26}
C_{16}	C_{19}	C_{47}	C_{23}	C_{16}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	C_{47}	C_{43}	C_{39}	C_{35}	C_{31}	C_{27}
C_{17}	C_{20}	C_{48}	C_{24}	C_{17}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	C_{48}	C_{44}	C_{40}	C_{36}	C_{32}	C_{28}
C_{18}	D_{03}	D_{03}	D_{04}	D_{04}	C_{42}	C_{46}	C_{34}	C_{38}	C_{26}	C_{30}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}
C_{19}	D_{03}	D_{03}	D_{04}	D_{04}	C_{43}	C_{47}	C_{35}	C_{39}	C_{27}	C_{31}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}
C_{20}	D_{03}	D_{03}	D_{04}	D_{04}	C_{44}	C_{48}	C_{36}	C_{40}	C_{28}	C_{32}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}
C_{21}	D_{03}	D_{03}	D_{04}	D_{04}	C_{45}	C_{41}	C_{37}	C_{33}	C_{29}	C_{25}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}
C_{22}	D_{03}	D_{03}	D_{04}	D_{04}	C_{46}	C_{42}	C_{38}	C_{34}	C_{30}	C_{26}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}
C_{23}	D_{03}	D_{03}	D_{04}	D_{04}	C_{47}	C_{43}	C_{39}	C_{35}	C_{31}	C_{27}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}
C_{24}	D_{03}	D_{03}	D_{04}	D_{04}	C_{48}	C_{44}	C_{40}	C_{36}	C_{32}	C_{28}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
C_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{41}	C_{45}	C_{33}	C_{37}	C_{25}	C_{29}	C_{29}	C_{37}	C_{25}	C_{45}
C_{02}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	D_{01}	D_{01}	D_{02}	D_{02}
C_{03}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{37}	C_{29}	C_{45}	C_{25}
C_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{42}	C_{46}	C_{34}	C_{38}	C_{26}	C_{30}	C_{30}	C_{38}	C_{26}	C_{46}
C_{05}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{43}	C_{47}	C_{35}	C_{39}	C_{27}	C_{31}	C_{31}	C_{39}	C_{27}	C_{47}
C_{06}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{44}	C_{48}	C_{36}	C_{40}	C_{28}	C_{32}	C_{32}	C_{40}	C_{28}	C_{48}
C_{07}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{45}	C_{41}	C_{37}	C_{33}	C_{29}	C_{25}	C_{25}	C_{33}	C_{29}	C_{41}
C_{08}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{46}	C_{42}	C_{38}	C_{34}	C_{30}	C_{26}	C_{26}	C_{34}	C_{30}	C_{42}
C_{09}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{47}	C_{43}	C_{39}	C_{35}	C_{31}	C_{27}	C_{27}	C_{35}	C_{31}	C_{43}
C_{10}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{48}	C_{44}	C_{40}	C_{36}	C_{32}	C_{28}	C_{28}	C_{36}	C_{32}	C_{44}
C_{11}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	D_{01}	D_{01}	D_{02}	D_{02}
C_{12}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	D_{01}	D_{01}	D_{02}	D_{02}
C_{13}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	D_{01}	D_{01}	D_{02}	D_{02}
C_{14}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	D_{01}	D_{01}	D_{02}	D_{02}
C_{15}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	D_{01}	D_{01}	D_{02}	D_{02}
C_{16}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	D_{01}	D_{01}	D_{02}	D_{02}
C_{17}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	D_{01}	D_{01}	D_{02}	D_{02}
C_{18}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{38}	C_{30}	C_{46}	C_{26}
C_{19}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{39}	C_{31}	C_{47}	C_{27}
C_{20}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{40}	C_{32}	C_{48}	C_{28}
C_{21}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	C_{33}	C_{25}	C_{41}	C_{29}
C_{22}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	C_{34}	C_{26}	C_{42}	C_{30}
C_{23}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	C_{35}	C_{27}	C_{43}	C_{31}
C_{24}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	C_{36}	C_{28}	C_{44}	C_{32}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B''_{40}	B''_{41}	B''_{42}	B''_{43}	B''_{44}	B''_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
C_{01}	C_{33}	C_{41}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}	C_{01}	C_{02}	C_{03}	D_{01}	D_{01}	C_{07}	C_{07}	D_{04}
C_{02}	D_{03}	D_{03}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	C_{01}	C_{02}	C_{03}	D_{01}	C_{07}	D_{01}	C_{07}	D_{04}
C_{03}	C_{41}	C_{33}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{01}	C_{02}	C_{03}	C_{07}	D_{01}	D_{01}	C_{07}	C_{01}
C_{04}	C_{34}	C_{42}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}	C_{04}	C_{11}	C_{18}	D_{01}	D_{01}	C_{08}	C_{08}	D_{04}
C_{05}	C_{35}	C_{43}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}	C_{05}	C_{12}	C_{19}	D_{01}	D_{01}	C_{09}	C_{09}	D_{04}
C_{06}	C_{36}	C_{44}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}	C_{06}	C_{13}	C_{20}	D_{01}	D_{01}	C_{10}	C_{10}	D_{04}
C_{07}	C_{37}	C_{45}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{07}	C_{14}	C_{21}	D_{01}	D_{01}	C_{01}	C_{01}	D_{04}
C_{08}	C_{38}	C_{46}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{08}	C_{15}	C_{22}	D_{01}	D_{01}	C_{04}	C_{04}	D_{04}
C_{09}	C_{39}	C_{47}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{09}	C_{16}	C_{23}	D_{01}	D_{01}	C_{05}	C_{05}	D_{04}
C_{10}	C_{40}	C_{48}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{10}	C_{17}	C_{24}	D_{01}	D_{01}	C_{06}	C_{06}	D_{04}
C_{11}	D_{03}	D_{03}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	C_{04}	C_{11}	C_{18}	D_{01}	C_{08}	D_{01}	C_{08}	D_{04}
C_{12}	D_{03}	D_{03}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	C_{05}	C_{12}	C_{19}	D_{01}	C_{09}	D_{01}	C_{09}	D_{04}
C_{13}	D_{03}	D_{03}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	C_{06}	C_{13}	C_{20}	D_{01}	C_{10}	D_{01}	C_{10}	D_{04}
C_{14}	D_{03}	D_{03}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	C_{07}	C_{14}	C_{21}	D_{01}	C_{01}	D_{01}	C_{01}	D_{04}
C_{15}	D_{03}	D_{03}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	C_{08}	C_{15}	C_{22}	D_{01}	C_{04}	D_{01}	C_{04}	D_{04}
C_{16}	D_{03}	D_{03}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	C_{09}	C_{16}	C_{23}	D_{01}	C_{05}	D_{01}	C_{05}	D_{04}
C_{17}	D_{03}	D_{03}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	C_{10}	C_{17}	C_{24}	D_{01}	C_{06}	D_{01}	C_{06}	D_{04}
C_{18}	C_{42}	C_{34}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{04}	C_{11}	C_{18}	C_{08}	D_{01}	D_{01}	C_{08}	C_{04}
C_{19}	C_{43}	C_{35}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{05}	C_{12}	C_{19}	C_{09}	D_{01}	D_{01}	C_{09}	C_{05}
C_{20}	C_{44}	C_{36}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{06}	C_{13}	C_{20}	C_{10}	D_{01}	D_{01}	C_{10}	C_{06}
C_{21}	C_{45}	C_{37}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{07}	C_{14}	C_{21}	C_{01}	D_{01}	D_{01}	C_{01}	C_{07}
C_{22}	C_{46}	C_{38}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{08}	C_{15}	C_{22}	C_{04}	D_{01}	D_{01}	C_{04}	C_{08}
C_{23}	C_{47}	C_{39}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{09}	C_{16}	C_{23}	C_{05}	D_{01}	D_{01}	C_{05}	C_{09}
C_{24}	C_{48}	C_{40}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{10}	C_{17}	C_{24}	C_{06}	D_{01}	D_{01}	C_{06}	C_{10}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
C_{01}	D_{04}	C_{01}	D_{02}	D_{02}	C_{14}	C_{14}	D_{04}	D_{04}	C_{02}	D_{03}	D_{03}	C_{21}	C_{21}	D_{04}	D_{04}	C_{01}
C_{02}	C_{01}	D_{04}	D_{02}	C_{14}	D_{02}	C_{14}	D_{04}	C_{02}	D_{04}	D_{03}	C_{21}	D_{03}	C_{21}	D_{04}	C_{01}	D_{04}
C_{03}	D_{04}	D_{04}	C_{14}	D_{02}	D_{02}	C_{14}	C_{02}	D_{04}	D_{04}	C_{21}	D_{03}	D_{03}	C_{21}	C_{01}	D_{04}	D_{04}
C_{04}	D_{04}	C_{04}	D_{02}	D_{02}	C_{15}	C_{15}	D_{04}	D_{04}	C_{11}	D_{03}	D_{03}	C_{22}	C_{22}	D_{04}	D_{04}	C_{18}
C_{05}	D_{04}	C_{05}	D_{02}	D_{02}	C_{16}	C_{16}	D_{04}	D_{04}	C_{12}	D_{03}	D_{03}	C_{23}	C_{23}	D_{04}	D_{04}	C_{19}
C_{06}	D_{04}	C_{06}	D_{02}	D_{02}	C_{17}	C_{17}	D_{04}	D_{04}	C_{13}	D_{03}	D_{03}	C_{24}	C_{24}	D_{04}	D_{04}	C_{20}
C_{07}	D_{04}	C_{07}	D_{02}	D_{02}	C_{02}	C_{02}	D_{04}	D_{04}	C_{14}	D_{03}	D_{03}	C_{03}	C_{03}	D_{04}	D_{04}	C_{21}
C_{08}	D_{04}	C_{08}	D_{02}	D_{02}	C_{11}	C_{11}	D_{04}	D_{04}	C_{15}	D_{03}	D_{03}	C_{18}	C_{18}	D_{04}	D_{04}	C_{22}
C_{09}	D_{04}	C_{09}	D_{02}	D_{02}	C_{12}	C_{12}	D_{04}	D_{04}	C_{16}	D_{03}	D_{03}	C_{19}	C_{19}	D_{04}	D_{04}	C_{23}
C_{10}	D_{04}	C_{10}	D_{02}	D_{02}	C_{13}	C_{13}	D_{04}	D_{04}	C_{17}	D_{03}	D_{03}	C_{20}	C_{20}	D_{04}	D_{04}	C_{24}
C_{11}	C_{04}	D_{04}	D_{02}	C_{15}	D_{02}	C_{15}	D_{04}	C_{11}	D_{04}	D_{03}	C_{22}	D_{03}	C_{22}	D_{04}	C_{18}	D_{04}
C_{12}	C_{05}	D_{04}	D_{02}	C_{16}	D_{02}	C_{16}	D_{04}	C_{12}	D_{04}	D_{03}	C_{23}	D_{03}	C_{23}	D_{04}	C_{19}	D_{04}
C_{13}	C_{06}	D_{04}	D_{02}	C_{17}	D_{02}	C_{17}	D_{04}	C_{13}	D_{04}	D_{03}	C_{24}	D_{03}	C_{24}	D_{04}	C_{20}	D_{04}
C_{14}	C_{07}	D_{04}	D_{02}	C_{02}	D_{02}	C_{02}	D_{04}	C_{14}	D_{04}	D_{03}	C_{03}	D_{03}	C_{03}	D_{04}	C_{21}	D_{04}
C_{15}	C_{08}	D_{04}	D_{02}	C_{11}	D_{02}	C_{11}	D_{04}	C_{15}	D_{04}	D_{03}	C_{18}	D_{03}	C_{18}	D_{04}	C_{22}	D_{04}
C_{16}	C_{09}	D_{04}	D_{02}	C_{12}	D_{02}	C_{12}	D_{04}	C_{16}	D_{04}	D_{03}	C_{19}	D_{03}	C_{19}	D_{04}	C_{23}	D_{04}
C_{17}	C_{10}	D_{04}	D_{02}	C_{13}	D_{02}	C_{13}	D_{04}	C_{17}	D_{04}	D_{03}	C_{20}	D_{03}	C_{20}	D_{04}	C_{24}	D_{04}
C_{18}	D_{04}	D_{04}	C_{15}	D_{02}	D_{02}	C_{15}	C_{11}	D_{04}	D_{04}	C_{22}	D_{03}	D_{03}	C_{22}	C_{18}	D_{04}	D_{04}
C_{19}	D_{04}	D_{04}	C_{16}	D_{02}	D_{02}	C_{16}	C_{12}	D_{04}	D_{04}	C_{23}	D_{03}	D_{03}	C_{23}	C_{19}	D_{04}	D_{04}
C_{20}	D_{04}	D_{04}	C_{17}	D_{02}	D_{02}	C_{17}	C_{13}	D_{04}	D_{04}	C_{24}	D_{03}	D_{03}	C_{24}	C_{20}	D_{04}	D_{04}
C_{21}	D_{04}	D_{04}	C_{02}	D_{02}	D_{02}	C_{02}	C_{14}	D_{04}	D_{04}	C_{03}	D_{03}	D_{03}	C_{03}	C_{21}	D_{04}	D_{04}
C_{22}	D_{04}	D_{04}	C_{11}	D_{02}	D_{02}	C_{11}	C_{15}	D_{04}	D_{04}	C_{18}	D_{03}	D_{03}	C_{18}	C_{22}	D_{04}	D_{04}
C_{23}	D_{04}	D_{04}	C_{12}	D_{02}	D_{02}	C_{12}	C_{16}	D_{04}	D_{04}	C_{19}	D_{03}	D_{03}	C_{19}	C_{23}	D_{04}	D_{04}
C_{24}	D_{04}	D_{04}	C_{13}	D_{02}	D_{02}	C_{13}	C_{17}	D_{04}	D_{04}	C_{20}	D_{03}	D_{03}	C_{20}	C_{24}	D_{04}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
C_{01}	C_{25}	D_{01}	D_{01}	C_{29}	C_{29}	D_{02}	D_{02}	C_{25}	C_{33}	D_{01}	D_{01}	C_{37}	C_{37}	D_{03}	D_{03}	C_{33}
C_{02}	C_{25}	D_{01}	C_{29}	D_{01}	C_{29}	D_{02}	C_{25}	D_{02}	C_{33}	D_{01}	C_{37}	D_{01}	C_{37}	D_{03}	C_{33}	D_{03}
C_{03}	C_{25}	C_{29}	D_{01}	D_{01}	C_{29}	C_{25}	D_{02}	D_{02}	C_{33}	C_{37}	D_{01}	D_{01}	C_{37}	C_{33}	D_{03}	D_{03}
C_{04}	C_{26}	D_{01}	D_{01}	C_{30}	C_{30}	D_{02}	D_{02}	C_{26}	C_{34}	D_{01}	D_{01}	C_{38}	C_{38}	D_{03}	D_{03}	C_{34}
C_{05}	C_{27}	D_{01}	D_{01}	C_{31}	C_{31}	D_{02}	D_{02}	C_{27}	C_{35}	D_{01}	D_{01}	C_{39}	C_{39}	D_{03}	D_{03}	C_{35}
C_{06}	C_{28}	D_{01}	D_{01}	C_{32}	C_{32}	D_{02}	D_{02}	C_{28}	C_{36}	D_{01}	D_{01}	C_{40}	C_{40}	D_{03}	D_{03}	C_{36}
C_{07}	C_{29}	D_{01}	D_{01}	C_{25}	C_{25}	D_{02}	D_{02}	C_{29}	C_{37}	D_{01}	D_{01}	C_{33}	C_{33}	D_{03}	D_{03}	C_{37}
C_{08}	C_{30}	D_{01}	D_{01}	C_{26}	C_{26}	D_{02}	D_{02}	C_{30}	C_{38}	D_{01}	D_{01}	C_{34}	C_{34}	D_{03}	D_{03}	C_{38}
C_{09}	C_{31}	D_{01}	D_{01}	C_{27}	C_{27}	D_{02}	D_{02}	C_{31}	C_{39}	D_{01}	D_{01}	C_{35}	C_{35}	D_{03}	D_{03}	C_{39}
C_{10}	C_{32}	D_{01}	D_{01}	C_{28}	C_{28}	D_{02}	D_{02}	C_{32}	C_{40}	D_{01}	D_{01}	C_{36}	C_{36}	D_{03}	D_{03}	C_{40}
C_{11}	C_{26}	D_{01}	C_{30}	D_{01}	C_{30}	D_{02}	C_{26}	D_{02}	C_{34}	D_{01}	C_{38}	D_{01}	C_{38}	D_{03}	C_{34}	D_{03}
C_{12}	C_{27}	D_{01}	C_{31}	D_{01}	C_{31}	D_{02}	C_{27}	D_{02}	C_{35}	D_{01}	C_{39}	D_{01}	C_{39}	D_{03}	C_{35}	D_{03}
C_{13}	C_{28}	D_{01}	C_{32}	D_{01}	C_{32}	D_{02}	C_{28}	D_{02}	C_{36}	D_{01}	C_{40}	D_{01}	C_{40}	D_{03}	C_{36}	D_{03}
C_{14}	C_{29}	D_{01}	C_{25}	D_{01}	C_{25}	D_{02}	C_{29}	D_{02}	C_{37}	D_{01}	C_{33}	D_{01}	C_{33}	D_{03}	C_{37}	D_{03}
C_{15}	C_{30}	D_{01}	C_{26}	D_{01}	C_{26}	D_{02}	C_{30}	D_{02}	C_{38}	D_{01}	C_{34}	D_{01}	C_{34}	D_{03}	C_{38}	D_{03}
C_{16}	C_{31}	D_{01}	C_{27}	D_{01}	C_{27}	D_{02}	C_{31}	D_{02}	C_{39}	D_{01}	C_{35}	D_{01}	C_{35}	D_{03}	C_{39}	D_{03}
C_{17}	C_{32}	D_{01}	C_{28}	D_{01}	C_{28}	D_{02}	C_{32}	D_{02}	C_{40}	D_{01}	C_{36}	D_{01}	C_{36}	D_{03}	C_{40}	D_{03}
C_{18}	C_{26}	C_{30}	D_{01}	D_{01}	C_{30}	C_{26}	D_{02}	D_{02}	C_{34}	C_{38}	D_{01}	D_{01}	C_{38}	C_{34}	D_{03}	D_{03}
C_{19}	C_{27}	C_{31}	D_{01}	D_{01}	C_{31}	C_{27}	D_{02}	D_{02}	C_{35}	C_{39}	D_{01}	D_{01}	C_{39}	C_{35}	D_{03}	D_{03}
C_{20}	C_{28}	C_{32}	D_{01}	D_{01}	C_{32}	C_{28}	D_{02}	D_{02}	C_{36}	C_{40}	D_{01}	D_{01}	C_{40}	C_{36}	D_{03}	D_{03}
C_{21}	C_{29}	C_{25}	D_{01}	D_{01}	C_{25}	C_{29}	D_{02}	D_{02}	C_{37}	C_{33}	D_{01}	D_{01}	C_{33}	C_{37}	D_{03}	D_{03}
C_{22}	C_{30}	C_{26}	D_{01}	D_{01}	C_{26}	C_{30}	D_{02}	D_{02}	C_{38}	C_{34}	D_{01}	D_{01}	C_{34}	C_{38}	D_{03}	D_{03}
C_{23}	C_{31}	C_{27}	D_{01}	D_{01}	C_{27}	C_{31}	D_{02}	D_{02}	C_{39}	C_{35}	D_{01}	D_{01}	C_{35}	C_{39}	D_{03}	D_{03}
C_{24}	C_{32}	C_{28}	D_{01}	D_{01}	C_{28}	C_{32}	D_{02}	D_{02}	C_{40}	C_{36}	D_{01}	D_{01}	C_{36}	C_{40}	D_{03}	D_{03}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
C_{01}	C_{41}	D_{02}	D_{02}	C_{45}	C_{45}	D_{03}	D_{03}	C_{41}	C_{25}	C_{29}	C_{25}	C_{29}	D_{01}	D_{02}	C_{33}	C_{37}
C_{02}	C_{41}	D_{02}	C_{45}	D_{02}	C_{45}	D_{03}	C_{41}	D_{03}	C_{25}	C_{29}	D_{02}	D_{01}	C_{29}	C_{25}	C_{33}	C_{37}
C_{03}	C_{41}	C_{45}	D_{02}	D_{02}	C_{45}	C_{41}	D_{03}	D_{03}	D_{02}	D_{01}	C_{25}	C_{29}	C_{29}	C_{25}	D_{03}	D_{01}
C_{04}	C_{42}	D_{02}	D_{02}	C_{46}	C_{46}	D_{03}	D_{03}	C_{42}	C_{26}	C_{30}	C_{26}	C_{30}	D_{01}	D_{02}	C_{34}	C_{38}
C_{05}	C_{43}	D_{02}	D_{02}	C_{47}	C_{47}	D_{03}	D_{03}	C_{43}	C_{27}	C_{31}	C_{27}	C_{31}	D_{01}	D_{02}	C_{35}	C_{39}
C_{06}	C_{44}	D_{02}	D_{02}	C_{48}	C_{48}	D_{03}	D_{03}	C_{44}	C_{28}	C_{32}	C_{28}	C_{32}	D_{01}	D_{02}	C_{36}	C_{40}
C_{07}	C_{45}	D_{02}	D_{02}	C_{41}	C_{41}	D_{03}	D_{03}	C_{45}	C_{29}	C_{25}	C_{29}	C_{25}	D_{01}	D_{02}	C_{37}	C_{33}
C_{08}	C_{46}	D_{02}	D_{02}	C_{42}	C_{42}	D_{03}	D_{03}	C_{46}	C_{30}	C_{26}	C_{30}	C_{26}	D_{01}	D_{02}	C_{38}	C_{34}
C_{09}	C_{47}	D_{02}	D_{02}	C_{43}	C_{43}	D_{03}	D_{03}	C_{47}	C_{31}	C_{27}	C_{31}	C_{27}	D_{01}	D_{02}	C_{39}	C_{35}
C_{10}	C_{48}	D_{02}	D_{02}	C_{44}	C_{44}	D_{03}	D_{03}	C_{48}	C_{32}	C_{28}	C_{32}	C_{28}	D_{01}	D_{02}	C_{40}	C_{36}
C_{11}	C_{42}	D_{02}	C_{46}	D_{02}	C_{46}	D_{03}	C_{42}	D_{03}	C_{26}	C_{30}	D_{02}	D_{01}	C_{30}	C_{26}	C_{34}	C_{38}
C_{12}	C_{43}	D_{02}	C_{47}	D_{02}	C_{47}	D_{03}	C_{43}	D_{03}	C_{27}	C_{31}	D_{02}	D_{01}	C_{31}	C_{27}	C_{35}	C_{39}
C_{13}	C_{44}	D_{02}	C_{48}	D_{02}	C_{48}	D_{03}	C_{44}	D_{03}	C_{28}	C_{32}	D_{02}	D_{01}	C_{32}	C_{28}	C_{36}	C_{40}
C_{14}	C_{45}	D_{02}	C_{41}	D_{02}	C_{41}	D_{03}	C_{45}	D_{03}	C_{29}	C_{25}	D_{02}	D_{01}	C_{25}	C_{29}	C_{37}	C_{33}
C_{15}	C_{46}	D_{02}	C_{42}	D_{02}	C_{42}	D_{03}	C_{46}	D_{03}	C_{30}	C_{26}	D_{02}	D_{01}	C_{26}	C_{30}	C_{38}	C_{34}
C_{16}	C_{47}	D_{02}	C_{43}	D_{02}	C_{43}	D_{03}	C_{47}	D_{03}	C_{31}	C_{27}	D_{02}	D_{01}	C_{27}	C_{31}	C_{39}	C_{35}
C_{17}	C_{48}	D_{02}	C_{44}	D_{02}	C_{44}	D_{03}	C_{48}	D_{03}	C_{32}	C_{28}	D_{02}	D_{01}	C_{28}	C_{32}	C_{40}	C_{36}
C_{18}	C_{42}	C_{46}	D_{02}	D_{02}	C_{46}	C_{42}	D_{03}	D_{03}	D_{02}	D_{01}	C_{26}	C_{30}	C_{30}	C_{26}	D_{03}	D_{01}
C_{19}	C_{43}	C_{47}	D_{02}	D_{02}	C_{47}	C_{43}	D_{03}	D_{03}	D_{02}	D_{01}	C_{27}	C_{31}	C_{31}	C_{27}	D_{03}	D_{01}
C_{20}	C_{44}	C_{48}	D_{02}	D_{02}	C_{48}	C_{44}	D_{03}	D_{03}	D_{02}	D_{01}	C_{28}	C_{32}	C_{32}	C_{28}	D_{03}	D_{01}
C_{21}	C_{45}	C_{41}	D_{02}	D_{02}	C_{41}	C_{45}	D_{03}	D_{03}	D_{02}	D_{01}	C_{29}	C_{25}	C_{25}	C_{29}	D_{03}	D_{01}
C_{22}	C_{46}	C_{42}	D_{02}	D_{02}	C_{42}	C_{46}	D_{03}	D_{03}	D_{02}	D_{01}	C_{30}	C_{26}	C_{26}	C_{30}	D_{03}	D_{01}
C_{23}	C_{47}	C_{43}	D_{02}	D_{02}	C_{43}	C_{47}	D_{03}	D_{03}	D_{02}	D_{01}	C_{31}	C_{27}	C_{27}	C_{31}	D_{03}	D_{01}
C_{24}	C_{48}	C_{44}	D_{02}	D_{02}	C_{44}	C_{48}	D_{03}	D_{03}	D_{02}	D_{01}	C_{32}	C_{28}	C_{28}	C_{32}	D_{03}	D_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
c_{01}	c_{33}	c_{37}	D_{01}	D_{03}	c_{01}	c_{07}	c_{01}	c_{07}	D_{01}	D_{04}	c_{41}	c_{45}	c_{41}	c_{45}	D_{02}	D_{03}
c_{02}	D_{03}	D_{01}	c_{37}	c_{33}	c_{01}	c_{07}	D_{04}	D_{01}	c_{07}	c_{01}	c_{41}	c_{45}	D_{03}	D_{02}	c_{45}	c_{41}
c_{03}	c_{33}	c_{37}	c_{37}	c_{33}	D_{04}	D_{01}	c_{01}	c_{07}	c_{07}	c_{01}	D_{03}	D_{02}	c_{41}	c_{45}	c_{45}	c_{41}
c_{04}	c_{34}	c_{38}	D_{01}	D_{03}	c_{04}	c_{08}	c_{04}	c_{08}	D_{01}	D_{01}	c_{42}	c_{46}	c_{42}	c_{46}	D_{02}	D_{03}
c_{05}	c_{35}	c_{39}	D_{01}	D_{03}	c_{05}	c_{09}	c_{05}	c_{09}	D_{01}	D_{01}	c_{43}	c_{47}	c_{43}	c_{47}	D_{02}	D_{03}
c_{06}	c_{36}	c_{40}	D_{01}	D_{03}	c_{06}	c_{10}	c_{06}	c_{10}	D_{01}	D_{01}	c_{44}	c_{48}	c_{44}	c_{48}	D_{02}	D_{03}
c_{07}	c_{37}	c_{33}	D_{01}	D_{03}	c_{07}	c_{01}	c_{07}	c_{01}	D_{01}	D_{01}	c_{45}	c_{41}	c_{45}	c_{41}	D_{02}	D_{03}
c_{08}	c_{38}	c_{34}	D_{01}	D_{03}	c_{08}	c_{04}	c_{08}	c_{04}	D_{01}	D_{01}	c_{46}	c_{42}	c_{46}	c_{42}	D_{02}	D_{03}
c_{09}	c_{39}	c_{35}	D_{01}	D_{03}	c_{09}	c_{05}	c_{09}	c_{05}	D_{01}	D_{01}	c_{47}	c_{43}	c_{47}	c_{43}	D_{02}	D_{03}
c_{10}	c_{40}	c_{36}	D_{01}	D_{03}	c_{10}	c_{06}	c_{10}	c_{06}	D_{01}	D_{01}	c_{48}	c_{44}	c_{48}	c_{44}	D_{02}	D_{03}
c_{11}	D_{03}	D_{01}	c_{38}	c_{34}	c_{04}	c_{08}	D_{04}	D_{01}	c_{08}	c_{04}	c_{42}	c_{46}	D_{03}	D_{02}	c_{46}	c_{42}
c_{12}	D_{03}	D_{01}	c_{39}	c_{35}	c_{05}	c_{09}	D_{04}	D_{01}	c_{09}	c_{05}	c_{43}	c_{47}	D_{03}	D_{02}	c_{47}	c_{43}
c_{13}	D_{03}	D_{01}	c_{40}	c_{36}	c_{06}	c_{10}	D_{04}	D_{01}	c_{10}	c_{06}	c_{44}	c_{48}	D_{03}	D_{02}	c_{48}	c_{44}
c_{14}	D_{03}	D_{01}	c_{33}	c_{37}	c_{07}	c_{01}	D_{04}	D_{01}	c_{01}	c_{07}	c_{45}	c_{41}	D_{03}	D_{02}	c_{41}	c_{45}
c_{15}	D_{03}	D_{01}	c_{34}	c_{38}	c_{08}	c_{04}	D_{04}	D_{01}	c_{04}	c_{08}	c_{46}	c_{42}	D_{03}	D_{02}	c_{42}	c_{46}
c_{16}	D_{03}	D_{01}	c_{35}	c_{39}	c_{09}	c_{05}	D_{04}	D_{01}	c_{05}	c_{09}	c_{47}	c_{43}	D_{03}	D_{02}	c_{43}	c_{47}
c_{17}	D_{03}	D_{01}	c_{36}	c_{40}	c_{10}	c_{06}	D_{04}	D_{01}	c_{06}	c_{10}	c_{48}	c_{44}	D_{03}	D_{02}	c_{44}	c_{48}
c_{18}	c_{34}	c_{38}	c_{38}	c_{34}	D_{04}	D_{01}	c_{04}	c_{08}	c_{08}	c_{04}	D_{03}	D_{02}	c_{42}	c_{46}	c_{46}	c_{42}
c_{19}	c_{35}	c_{39}	c_{39}	c_{35}	D_{04}	D_{01}	c_{05}	c_{09}	c_{09}	c_{05}	D_{03}	D_{02}	c_{43}	c_{47}	c_{47}	c_{43}
c_{20}	c_{36}	c_{40}	c_{40}	c_{36}	D_{04}	D_{01}	c_{06}	c_{10}	c_{10}	c_{06}	D_{03}	D_{02}	c_{44}	c_{48}	c_{48}	c_{44}
c_{21}	c_{37}	c_{33}	c_{33}	c_{37}	D_{04}	D_{01}	c_{07}	c_{01}	c_{01}	c_{07}	D_{03}	D_{02}	c_{45}	c_{41}	c_{41}	c_{45}
c_{22}	c_{38}	c_{34}	c_{34}	c_{38}	D_{04}	D_{01}	c_{08}	c_{04}	c_{04}	c_{08}	D_{03}	D_{02}	c_{46}	c_{42}	c_{42}	c_{46}
c_{23}	c_{39}	c_{35}	c_{35}	c_{39}	D_{04}	D_{01}	c_{09}	c_{05}	c_{05}	c_{09}	D_{03}	D_{02}	c_{47}	c_{43}	c_{43}	c_{47}
c_{24}	c_{40}	c_{36}	c_{36}	c_{40}	D_{04}	D_{01}	c_{10}	c_{06}	c_{06}	c_{10}	D_{03}	D_{02}	c_{48}	c_{44}	c_{44}	c_{48}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
C_{01}	C_{02}	C_{14}	C_{02}	C_{14}	D_{02}	D_{04}	C_{01}	C_{21}	C_{01}	C_{21}	D_{03}	D_{04}	C_{01}	D_{02}	D_{03}	D_{04}
C_{02}	C_{02}	C_{14}	D_{04}	D_{02}	C_{14}	C_{02}	C_{01}	C_{21}	D_{04}	D_{03}	C_{21}	C_{01}	D_{01}	D_{02}	D_{03}	D_{04}
C_{03}	D_{04}	D_{02}	C_{02}	C_{14}	C_{14}	C_{02}	D_{04}	D_{03}	C_{01}	C_{21}	C_{21}	C_{01}	D_{01}	D_{02}	D_{03}	D_{04}
C_{04}	C_{11}	C_{15}	C_{11}	C_{15}	D_{02}	D_{04}	C_{18}	C_{22}	C_{18}	C_{22}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{05}	C_{12}	C_{16}	C_{12}	C_{16}	D_{02}	D_{04}	C_{19}	C_{23}	C_{19}	C_{23}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{06}	C_{13}	C_{17}	C_{13}	C_{17}	D_{02}	D_{04}	C_{20}	C_{24}	C_{20}	C_{24}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{07}	C_{14}	C_{02}	C_{14}	C_{02}	D_{02}	D_{04}	C_{21}	C_{03}	C_{21}	C_{03}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{08}	C_{15}	C_{11}	C_{15}	C_{11}	D_{02}	D_{04}	C_{22}	C_{18}	C_{22}	C_{18}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{09}	C_{16}	C_{12}	C_{16}	C_{12}	D_{02}	D_{04}	C_{23}	C_{19}	C_{23}	C_{19}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{10}	C_{17}	C_{13}	C_{17}	C_{13}	D_{02}	D_{04}	C_{24}	C_{20}	C_{24}	C_{20}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
C_{11}	C_{11}	C_{15}	D_{04}	D_{02}	C_{15}	C_{11}	C_{18}	C_{22}	D_{04}	D_{03}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
C_{12}	C_{12}	C_{16}	D_{04}	D_{02}	C_{16}	C_{12}	C_{19}	C_{23}	D_{04}	D_{03}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
C_{13}	C_{13}	C_{17}	D_{04}	D_{02}	C_{17}	C_{13}	C_{20}	C_{24}	D_{04}	D_{03}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
C_{14}	C_{14}	C_{02}	D_{04}	D_{02}	C_{02}	C_{14}	C_{21}	C_{03}	D_{04}	D_{03}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
C_{15}	C_{15}	C_{11}	D_{04}	D_{02}	C_{11}	C_{15}	C_{22}	C_{11}	D_{04}	D_{03}	C_{11}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
C_{16}	C_{16}	C_{12}	D_{04}	D_{02}	C_{12}	C_{16}	C_{23}	C_{12}	D_{04}	D_{03}	C_{12}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
C_{17}	C_{17}	C_{13}	D_{04}	D_{02}	C_{13}	C_{17}	C_{24}	C_{13}	D_{04}	D_{03}	C_{13}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
C_{18}	D_{04}	D_{02}	C_{11}	C_{15}	C_{15}	C_{11}	D_{04}	D_{03}	C_{18}	C_{22}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
C_{19}	D_{04}	D_{02}	C_{12}	C_{16}	C_{16}	C_{12}	D_{04}	D_{03}	C_{19}	C_{23}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
C_{20}	D_{04}	D_{02}	C_{13}	C_{17}	C_{17}	C_{13}	D_{04}	D_{03}	C_{20}	C_{24}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
C_{21}	D_{04}	D_{02}	C_{14}	C_{02}	C_{02}	C_{14}	D_{04}	D_{03}	C_{21}	C_{03}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
C_{22}	D_{04}	D_{02}	C_{15}	C_{11}	C_{11}	C_{15}	D_{04}	D_{03}	C_{22}	C_{11}	C_{11}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
C_{23}	D_{04}	D_{02}	C_{16}	C_{12}	C_{12}	C_{16}	D_{04}	D_{03}	C_{23}	C_{12}	C_{12}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
C_{24}	D_{04}	D_{02}	C_{17}	C_{13}	C_{13}	C_{17}	D_{04}	D_{03}	C_{24}	C_{13}	C_{13}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
C_{25}	c_{25}	c_{33}	c_{29}	c_{41}	c_{37}	c_{45}	c_{25}	c_{01}	c_{33}	c_{01}	c_{29}	c_{02}	c_{41}	c_{02}	c_{37}	c_{03}
C_{26}	c_{26}	c_{34}	c_{30}	c_{42}	c_{38}	c_{46}	c_{26}	c_{04}	c_{34}	c_{04}	c_{30}	c_{11}	c_{42}	c_{11}	c_{38}	c_{18}
C_{27}	c_{27}	c_{35}	c_{31}	c_{43}	c_{39}	c_{47}	c_{27}	c_{05}	c_{35}	c_{05}	c_{31}	c_{12}	c_{43}	c_{12}	c_{39}	c_{19}
C_{28}	c_{28}	c_{36}	c_{32}	c_{44}	c_{40}	c_{48}	c_{28}	c_{06}	c_{36}	c_{06}	c_{32}	c_{13}	c_{44}	c_{13}	c_{40}	c_{20}
C_{29}	c_{29}	c_{37}	c_{25}	c_{45}	c_{33}	c_{41}	c_{29}	c_{07}	c_{37}	c_{07}	c_{25}	c_{14}	c_{45}	c_{14}	c_{33}	c_{21}
C_{30}	c_{30}	c_{38}	c_{26}	c_{46}	c_{34}	c_{42}	c_{30}	c_{08}	c_{38}	c_{08}	c_{26}	c_{15}	c_{46}	c_{15}	c_{34}	c_{22}
C_{31}	c_{31}	c_{39}	c_{27}	c_{47}	c_{35}	c_{43}	c_{31}	c_{09}	c_{39}	c_{09}	c_{27}	c_{16}	c_{47}	c_{16}	c_{35}	c_{23}
C_{32}	c_{32}	c_{40}	c_{28}	c_{48}	c_{36}	c_{44}	c_{32}	c_{10}	c_{40}	c_{10}	c_{28}	c_{17}	c_{48}	c_{17}	c_{36}	c_{24}
C_{33}	c_{33}	c_{25}	c_{41}	c_{29}	c_{45}	c_{37}	c_{01}	c_{25}	c_{01}	c_{33}	c_{02}	c_{29}	c_{02}	c_{41}	c_{03}	c_{37}
C_{34}	c_{34}	c_{26}	c_{42}	c_{30}	c_{46}	c_{38}	c_{04}	c_{26}	c_{04}	c_{34}	c_{11}	c_{30}	c_{11}	c_{42}	c_{18}	c_{38}
C_{35}	c_{35}	c_{27}	c_{43}	c_{31}	c_{47}	c_{39}	c_{05}	c_{27}	c_{05}	c_{35}	c_{12}	c_{31}	c_{12}	c_{43}	c_{19}	c_{39}
C_{36}	c_{36}	c_{28}	c_{44}	c_{32}	c_{48}	c_{40}	c_{06}	c_{28}	c_{06}	c_{36}	c_{13}	c_{32}	c_{13}	c_{44}	c_{20}	c_{40}
C_{37}	c_{37}	c_{29}	c_{45}	c_{33}	c_{41}	c_{33}	c_{07}	c_{29}	c_{07}	c_{37}	c_{14}	c_{33}	c_{14}	c_{45}	c_{21}	c_{33}
C_{38}	c_{38}	c_{30}	c_{46}	c_{34}	c_{42}	c_{34}	c_{08}	c_{30}	c_{08}	c_{38}	c_{15}	c_{34}	c_{15}	c_{46}	c_{22}	c_{34}
C_{39}	c_{39}	c_{31}	c_{47}	c_{35}	c_{43}	c_{35}	c_{09}	c_{31}	c_{09}	c_{39}	c_{16}	c_{35}	c_{16}	c_{47}	c_{23}	c_{35}
C_{40}	c_{40}	c_{32}	c_{48}	c_{36}	c_{44}	c_{36}	c_{10}	c_{32}	c_{10}	c_{40}	c_{17}	c_{36}	c_{17}	c_{48}	c_{24}	c_{36}
C_{41}	c_{41}	c_{45}	c_{33}	c_{37}	c_{25}	c_{29}	c_{02}	c_{14}	c_{03}	c_{21}	c_{01}	c_{07}	c_{03}	c_{21}	c_{01}	c_{07}
C_{42}	c_{42}	c_{46}	c_{34}	c_{38}	c_{26}	c_{30}	c_{11}	c_{15}	c_{18}	c_{22}	c_{04}	c_{08}	c_{18}	c_{22}	c_{04}	c_{08}
C_{43}	c_{43}	c_{47}	c_{36}	c_{39}	c_{27}	c_{31}	c_{12}	c_{16}	c_{19}	c_{23}	c_{05}	c_{09}	c_{19}	c_{23}	c_{05}	c_{09}
C_{44}	c_{44}	c_{48}	c_{37}	c_{40}	c_{28}	c_{32}	c_{13}	c_{17}	c_{20}	c_{24}	c_{06}	c_{10}	c_{20}	c_{24}	c_{06}	c_{10}
C_{45}	c_{45}	c_{41}	c_{38}	c_{33}	c_{29}	c_{25}	c_{14}	c_{02}	c_{21}	c_{03}	c_{07}	c_{01}	c_{21}	c_{03}	c_{07}	c_{01}
C_{46}	c_{46}	c_{42}	c_{39}	c_{34}	c_{30}	c_{26}	c_{15}	c_{11}	c_{22}	c_{18}	c_{08}	c_{04}	c_{22}	c_{18}	c_{08}	c_{04}
C_{47}	c_{47}	c_{43}	c_{40}	c_{35}	c_{31}	c_{27}	c_{16}	c_{12}	c_{23}	c_{19}	c_{09}	c_{05}	c_{23}	c_{19}	c_{09}	c_{05}
C_{48}	c_{48}	c_{44}	c_{41}	c_{36}	c_{32}	c_{28}	c_{17}	c_{13}	c_{24}	c_{20}	c_{10}	c_{06}	c_{24}	c_{20}	c_{10}	c_{06}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
C_{25}	C_{45}	C_{03}	C_{07}	C_{07}	C_{14}	C_{21}	C_{14}	C_{21}	C_{25}	C_{25}	D_{01}	D_{02}	C_{29}	C_{29}	C_{33}	D_{01}
C_{26}	C_{46}	C_{18}	C_{08}	C_{08}	C_{15}	C_{22}	C_{15}	C_{22}	C_{26}	C_{26}	D_{01}	D_{02}	C_{30}	C_{30}	C_{34}	D_{01}
C_{27}	C_{47}	C_{19}	C_{09}	C_{09}	C_{16}	C_{23}	C_{16}	C_{23}	C_{27}	C_{27}	D_{01}	D_{02}	C_{31}	C_{31}	C_{35}	D_{01}
C_{28}	C_{48}	C_{20}	C_{10}	C_{10}	C_{17}	C_{24}	C_{17}	C_{24}	C_{28}	C_{28}	D_{01}	D_{02}	C_{32}	C_{32}	C_{36}	D_{01}
C_{29}	C_{41}	C_{21}	C_{01}	C_{01}	C_{02}	C_{03}	C_{02}	C_{03}	C_{29}	C_{29}	D_{01}	D_{02}	C_{25}	C_{25}	C_{37}	D_{01}
C_{30}	C_{42}	C_{22}	C_{04}	C_{04}	C_{11}	C_{18}	C_{11}	C_{18}	C_{30}	C_{30}	D_{01}	D_{02}	C_{26}	C_{26}	C_{38}	D_{01}
C_{31}	C_{43}	C_{23}	C_{05}	C_{05}	C_{12}	C_{19}	C_{12}	C_{19}	C_{31}	C_{31}	D_{01}	D_{02}	C_{27}	C_{27}	C_{39}	D_{01}
C_{32}	C_{44}	C_{24}	C_{06}	C_{06}	C_{13}	C_{20}	C_{13}	C_{20}	C_{32}	C_{32}	D_{01}	D_{02}	C_{28}	C_{28}	C_{40}	D_{01}
C_{33}	C_{03}	C_{45}	C_{14}	C_{21}	C_{07}	C_{07}	C_{21}	C_{14}	C_{25}	D_{01}	C_{25}	C_{29}	C_{29}	D_{02}	C_{33}	C_{33}
C_{34}	C_{18}	C_{46}	C_{15}	C_{22}	C_{08}	C_{08}	C_{22}	C_{15}	C_{26}	D_{01}	C_{26}	C_{30}	C_{30}	D_{02}	C_{34}	C_{34}
C_{35}	C_{19}	C_{47}	C_{16}	C_{23}	C_{09}	C_{09}	C_{23}	C_{16}	C_{27}	D_{01}	C_{27}	C_{31}	C_{31}	D_{02}	C_{35}	C_{35}
C_{36}	C_{20}	C_{48}	C_{17}	C_{24}	C_{10}	C_{10}	C_{24}	C_{17}	C_{28}	D_{01}	C_{28}	C_{32}	C_{32}	D_{02}	C_{36}	C_{36}
C_{37}	C_{21}	C_{41}	C_{02}	C_{03}	C_{01}	C_{01}	C_{03}	C_{02}	C_{29}	D_{01}	C_{29}	C_{25}	C_{25}	D_{02}	C_{37}	C_{37}
C_{38}	C_{22}	C_{42}	C_{11}	C_{18}	C_{04}	C_{04}	C_{18}	C_{11}	C_{30}	D_{01}	C_{30}	C_{26}	C_{26}	D_{02}	C_{38}	C_{38}
C_{39}	C_{23}	C_{43}	C_{12}	C_{19}	C_{05}	C_{05}	C_{19}	C_{12}	C_{31}	D_{01}	C_{31}	C_{27}	C_{27}	D_{02}	C_{39}	C_{39}
C_{40}	C_{24}	C_{44}	C_{13}	C_{20}	C_{06}	C_{06}	C_{20}	C_{13}	C_{32}	D_{01}	C_{32}	C_{28}	C_{28}	D_{02}	C_{40}	C_{40}
C_{41}	C_{02}	C_{14}	C_{25}	C_{33}	C_{29}	C_{37}	C_{41}	C_{45}	D_{02}	C_{29}	C_{25}	C_{29}	D_{01}	C_{25}	D_{03}	C_{33}
C_{42}	C_{11}	C_{15}	C_{26}	C_{34}	C_{30}	C_{38}	C_{42}	C_{46}	D_{02}	C_{30}	C_{26}	C_{30}	D_{01}	C_{26}	D_{03}	C_{34}
C_{43}	C_{12}	C_{16}	C_{27}	C_{35}	C_{31}	C_{39}	C_{43}	C_{47}	D_{02}	C_{31}	C_{27}	C_{31}	D_{01}	C_{27}	D_{03}	C_{35}
C_{44}	C_{13}	C_{17}	C_{28}	C_{36}	C_{32}	C_{40}	C_{44}	C_{48}	D_{02}	C_{32}	C_{28}	C_{32}	D_{01}	C_{28}	D_{03}	C_{36}
C_{45}	C_{14}	C_{02}	C_{29}	C_{37}	C_{25}	C_{33}	C_{45}	C_{41}	D_{02}	C_{25}	C_{29}	C_{25}	D_{01}	C_{29}	D_{03}	C_{37}
C_{46}	C_{15}	C_{11}	C_{30}	C_{38}	C_{26}	C_{34}	C_{46}	C_{42}	D_{02}	C_{26}	C_{30}	C_{26}	D_{01}	C_{30}	D_{03}	C_{38}
C_{47}	C_{16}	C_{12}	C_{31}	C_{39}	C_{27}	C_{35}	C_{47}	C_{43}	D_{02}	C_{27}	C_{31}	C_{27}	D_{01}	C_{31}	D_{03}	C_{39}
C_{48}	C_{17}	C_{13}	C_{32}	C_{40}	C_{28}	C_{36}	C_{48}	C_{44}	D_{02}	C_{28}	C_{32}	C_{28}	D_{01}	C_{32}	D_{03}	C_{40}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
C_{25}	C_{33}	C_{37}	C_{37}	D_{03}	C_{45}	D_{02}	C_{45}	C_{41}	C_{41}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{01}	C_{02}
C_{26}	C_{34}	C_{38}	C_{38}	D_{03}	C_{46}	D_{02}	C_{46}	C_{42}	C_{42}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{04}	C_{11}
C_{27}	C_{35}	C_{39}	C_{39}	D_{03}	C_{47}	D_{02}	C_{47}	C_{43}	C_{43}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{05}	C_{12}
C_{28}	C_{36}	C_{40}	C_{40}	D_{03}	C_{48}	D_{02}	C_{48}	C_{44}	C_{44}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{06}	C_{13}
C_{29}	C_{37}	C_{33}	C_{33}	D_{03}	C_{41}	D_{02}	C_{41}	C_{45}	C_{45}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{07}	C_{14}
C_{30}	C_{38}	C_{34}	C_{34}	D_{03}	C_{42}	D_{02}	C_{42}	C_{46}	C_{46}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{08}	C_{15}
C_{31}	C_{39}	C_{35}	C_{35}	D_{03}	C_{43}	D_{02}	C_{43}	C_{47}	C_{47}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{09}	C_{16}
C_{32}	C_{40}	C_{36}	C_{36}	D_{03}	C_{44}	D_{02}	C_{44}	C_{48}	C_{48}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	C_{10}	C_{17}
C_{33}	D_{01}	D_{03}	C_{37}	C_{37}	D_{03}	C_{41}	C_{45}	D_{02}	C_{41}	C_{45}	C_{03}	C_{02}	C_{07}	C_{14}	D_{01}	D_{02}
C_{34}	D_{01}	D_{03}	C_{38}	C_{38}	D_{03}	C_{42}	C_{46}	D_{02}	C_{42}	C_{46}	C_{18}	C_{11}	C_{08}	C_{15}	D_{01}	D_{02}
C_{35}	D_{01}	D_{03}	C_{39}	C_{39}	D_{03}	C_{43}	C_{47}	D_{02}	C_{43}	C_{47}	C_{19}	C_{12}	C_{09}	C_{16}	D_{01}	D_{02}
C_{36}	D_{01}	D_{03}	C_{40}	C_{40}	D_{03}	C_{44}	C_{48}	D_{02}	C_{44}	C_{48}	C_{20}	C_{13}	C_{10}	C_{17}	D_{01}	D_{02}
C_{37}	D_{01}	D_{03}	C_{33}	C_{33}	D_{03}	C_{45}	C_{41}	D_{02}	C_{45}	C_{41}	C_{21}	C_{14}	C_{01}	C_{02}	D_{01}	D_{02}
C_{38}	D_{01}	D_{03}	C_{34}	C_{34}	D_{03}	C_{46}	C_{42}	D_{02}	C_{46}	C_{42}	C_{22}	C_{15}	C_{04}	C_{11}	D_{01}	D_{02}
C_{39}	D_{01}	D_{03}	C_{35}	C_{35}	D_{03}	C_{47}	C_{43}	D_{02}	C_{47}	C_{43}	C_{23}	C_{16}	C_{05}	C_{12}	D_{01}	D_{02}
C_{40}	D_{01}	D_{03}	C_{36}	C_{36}	D_{03}	C_{48}	C_{44}	D_{02}	C_{48}	C_{44}	C_{24}	C_{17}	C_{06}	C_{13}	D_{01}	D_{02}
C_{41}	C_{37}	C_{33}	D_{01}	C_{37}	C_{41}	C_{41}	D_{02}	C_{45}	D_{03}	C_{45}	C_{01}	C_{02}	C_{07}	C_{14}	C_{07}	C_{14}
C_{42}	C_{38}	C_{34}	D_{01}	C_{38}	C_{42}	C_{42}	D_{02}	C_{46}	D_{03}	C_{46}	C_{04}	C_{11}	C_{08}	C_{15}	C_{08}	C_{15}
C_{43}	C_{39}	C_{35}	D_{01}	C_{39}	C_{43}	C_{43}	D_{02}	C_{47}	D_{03}	C_{47}	C_{05}	C_{12}	C_{09}	C_{16}	C_{09}	C_{16}
C_{44}	C_{40}	C_{36}	D_{01}	C_{40}	C_{44}	C_{44}	D_{02}	C_{48}	D_{03}	C_{48}	C_{06}	C_{13}	C_{10}	C_{17}	C_{10}	C_{17}
C_{45}	C_{33}	C_{37}	D_{01}	C_{33}	C_{45}	C_{45}	D_{02}	C_{41}	D_{03}	C_{41}	C_{07}	C_{14}	C_{01}	C_{02}	C_{01}	C_{02}
C_{46}	C_{34}	C_{38}	D_{01}	C_{34}	C_{46}	C_{46}	D_{02}	C_{42}	D_{03}	C_{42}	C_{08}	C_{15}	C_{04}	C_{11}	C_{04}	C_{11}
C_{47}	C_{35}	C_{39}	D_{01}	C_{35}	C_{47}	C_{47}	D_{02}	C_{43}	D_{03}	C_{43}	C_{09}	C_{16}	C_{05}	C_{12}	C_{05}	C_{12}
C_{48}	C_{36}	C_{40}	D_{01}	C_{36}	C_{48}	C_{48}	D_{02}	C_{44}	D_{03}	C_{44}	C_{10}	C_{17}	C_{06}	C_{13}	C_{06}	C_{13}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
C_{25}	C_{07}	C_{14}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	C_{07}	C_{14}	C_{01}	C_{02}	C_{29}	C_{07}	C_{25}	C_{14}
C_{26}	C_{08}	C_{15}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	C_{08}	C_{15}	C_{04}	C_{11}	C_{30}	C_{08}	C_{26}	C_{15}
C_{27}	C_{09}	C_{16}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	C_{09}	C_{16}	C_{05}	C_{12}	C_{31}	C_{09}	C_{27}	C_{16}
C_{28}	C_{10}	C_{17}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	C_{10}	C_{17}	C_{06}	C_{13}	C_{32}	C_{10}	C_{28}	C_{17}
C_{29}	C_{01}	C_{02}	C_{29}	C_{07}	C_{25}	C_{14}	C_{01}	C_{02}	C_{01}	C_{02}	C_{07}	C_{14}	C_{25}	C_{01}	C_{29}	C_{02}
C_{30}	C_{04}	C_{11}	C_{30}	C_{08}	C_{26}	C_{15}	C_{04}	C_{11}	C_{04}	C_{11}	C_{08}	C_{15}	C_{26}	C_{04}	C_{30}	C_{11}
C_{31}	C_{05}	C_{12}	C_{31}	C_{09}	C_{27}	C_{16}	C_{05}	C_{12}	C_{05}	C_{12}	C_{09}	C_{16}	C_{27}	C_{05}	C_{31}	C_{12}
C_{32}	C_{06}	C_{13}	C_{32}	C_{10}	C_{28}	C_{17}	C_{06}	C_{13}	C_{06}	C_{13}	C_{10}	C_{17}	C_{28}	C_{06}	C_{32}	C_{13}
C_{33}	D_{04}	D_{04}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	C_{07}	C_{14}	C_{01}	C_{02}	C_{02}	C_{14}	C_{01}	C_{07}
C_{34}	D_{04}	D_{04}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	C_{08}	C_{15}	C_{04}	C_{11}	C_{11}	C_{15}	C_{04}	C_{08}
C_{35}	D_{04}	D_{04}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	C_{09}	C_{16}	C_{05}	C_{12}	C_{12}	C_{16}	C_{05}	C_{09}
C_{36}	D_{04}	D_{04}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	C_{10}	C_{17}	C_{06}	C_{13}	C_{13}	C_{17}	C_{06}	C_{10}
C_{37}	D_{04}	D_{04}	C_{07}	C_{29}	C_{14}	C_{25}	C_{02}	C_{01}	C_{01}	C_{02}	C_{07}	C_{14}	C_{14}	C_{02}	C_{07}	C_{01}
C_{38}	D_{04}	D_{04}	C_{08}	C_{30}	C_{15}	C_{26}	C_{11}	C_{04}	C_{04}	C_{11}	C_{08}	C_{15}	C_{15}	C_{11}	C_{08}	C_{04}
C_{39}	D_{04}	D_{04}	C_{09}	C_{31}	C_{16}	C_{27}	C_{12}	C_{05}	C_{05}	C_{12}	C_{09}	C_{16}	C_{16}	C_{12}	C_{09}	C_{05}
C_{40}	D_{04}	D_{04}	C_{10}	C_{32}	C_{17}	C_{28}	C_{13}	C_{06}	C_{06}	C_{13}	C_{10}	C_{17}	C_{17}	C_{13}	C_{10}	C_{06}
C_{41}	C_{01}	C_{02}	C_{02}	C_{14}	C_{01}	C_{07}	C_{25}	C_{29}	D_{01}	D_{02}	D_{04}	D_{04}	C_{01}	C_{25}	C_{02}	C_{29}
C_{42}	C_{04}	C_{11}	C_{11}	C_{15}	C_{04}	C_{08}	C_{26}	C_{30}	D_{01}	D_{02}	D_{04}	D_{04}	C_{04}	C_{26}	C_{11}	C_{30}
C_{43}	C_{05}	C_{12}	C_{12}	C_{16}	C_{05}	C_{09}	C_{27}	C_{31}	D_{01}	D_{02}	D_{04}	D_{04}	C_{05}	C_{27}	C_{12}	C_{31}
C_{44}	C_{06}	C_{13}	C_{13}	C_{17}	C_{06}	C_{10}	C_{28}	C_{32}	D_{01}	D_{02}	D_{04}	D_{04}	C_{06}	C_{28}	C_{13}	C_{32}
C_{45}	C_{07}	C_{14}	C_{14}	C_{02}	C_{07}	C_{01}	C_{29}	C_{25}	D_{01}	D_{02}	D_{04}	D_{04}	C_{07}	C_{29}	C_{14}	C_{25}
C_{46}	C_{08}	C_{15}	C_{15}	C_{11}	C_{08}	C_{04}	C_{30}	C_{26}	D_{01}	D_{02}	D_{04}	D_{04}	C_{08}	C_{30}	C_{15}	C_{26}
C_{47}	C_{09}	C_{16}	C_{16}	C_{12}	C_{09}	C_{05}	C_{31}	C_{27}	D_{01}	D_{02}	D_{04}	D_{04}	C_{09}	C_{31}	C_{16}	C_{27}
C_{48}	C_{10}	C_{17}	C_{17}	C_{13}	C_{10}	C_{06}	C_{32}	C_{28}	D_{01}	D_{02}	D_{04}	D_{04}	C_{10}	C_{32}	C_{17}	C_{28}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
C_{25}	C_{01}	C_{02}	C_{02}	C_{14}	C_{01}	C_{07}	C_{25}	C_{29}	C_{01}	D_{04}	C_{07}	C_{21}	C_{01}	C_{03}	D_{01}	D_{03}
C_{26}	C_{04}	C_{11}	C_{11}	C_{15}	C_{04}	C_{08}	C_{26}	C_{30}	C_{04}	D_{04}	C_{08}	C_{22}	C_{04}	C_{18}	D_{01}	D_{03}
C_{27}	C_{05}	C_{12}	C_{12}	C_{16}	C_{05}	C_{09}	C_{27}	C_{31}	C_{05}	D_{04}	C_{09}	C_{23}	C_{05}	C_{19}	D_{01}	D_{03}
C_{28}	C_{06}	C_{13}	C_{13}	C_{17}	C_{06}	C_{10}	C_{28}	C_{32}	C_{06}	D_{04}	C_{10}	C_{24}	C_{06}	C_{20}	D_{01}	D_{03}
C_{29}	C_{07}	C_{14}	C_{14}	C_{02}	C_{07}	C_{01}	C_{29}	C_{25}	C_{07}	D_{04}	C_{01}	C_{03}	C_{07}	C_{21}	D_{01}	D_{03}
C_{30}	C_{08}	C_{15}	C_{15}	C_{11}	C_{08}	C_{04}	C_{30}	C_{26}	C_{08}	D_{04}	C_{04}	C_{18}	C_{08}	C_{22}	D_{01}	D_{03}
C_{31}	C_{09}	C_{16}	C_{16}	C_{12}	C_{09}	C_{05}	C_{31}	C_{27}	C_{09}	D_{04}	C_{05}	C_{19}	C_{09}	C_{23}	D_{01}	D_{03}
C_{32}	C_{10}	C_{17}	C_{17}	C_{13}	C_{10}	C_{06}	C_{32}	C_{28}	C_{10}	D_{04}	C_{06}	C_{20}	C_{10}	C_{24}	D_{01}	D_{03}
C_{33}	C_{25}	C_{29}	C_{29}	C_{07}	C_{25}	C_{14}	C_{01}	C_{02}	D_{01}	C_{21}	D_{04}	D_{04}	D_{01}	D_{03}	C_{01}	C_{03}
C_{34}	C_{26}	C_{30}	C_{30}	C_{08}	C_{26}	C_{15}	C_{04}	C_{11}	D_{01}	C_{22}	D_{04}	D_{04}	D_{01}	D_{03}	C_{04}	C_{18}
C_{35}	C_{27}	C_{31}	C_{31}	C_{09}	C_{27}	C_{16}	C_{05}	C_{12}	D_{01}	C_{23}	D_{04}	D_{04}	D_{01}	D_{03}	C_{05}	C_{19}
C_{36}	C_{28}	C_{32}	C_{32}	C_{10}	C_{28}	C_{17}	C_{06}	C_{13}	D_{01}	C_{24}	D_{04}	D_{04}	D_{01}	D_{03}	C_{06}	C_{20}
C_{37}	C_{29}	C_{25}	C_{25}	C_{01}	C_{29}	C_{02}	C_{07}	C_{14}	D_{01}	C_{03}	D_{04}	D_{04}	D_{01}	D_{03}	C_{07}	C_{21}
C_{38}	C_{30}	C_{26}	C_{26}	C_{04}	C_{30}	C_{11}	C_{08}	C_{15}	D_{01}	C_{18}	D_{04}	D_{04}	D_{01}	D_{03}	C_{08}	C_{22}
C_{39}	C_{31}	C_{27}	C_{27}	C_{05}	C_{31}	C_{12}	C_{09}	C_{16}	D_{01}	C_{19}	D_{04}	D_{04}	D_{01}	D_{03}	C_{09}	C_{23}
C_{40}	C_{32}	C_{28}	C_{28}	C_{06}	C_{32}	C_{13}	C_{10}	C_{17}	D_{01}	C_{20}	D_{04}	D_{04}	D_{01}	D_{03}	C_{10}	C_{24}
C_{41}	C_{14}	C_{07}	C_{07}	C_{29}	C_{14}	C_{25}	C_{02}	C_{01}	C_{07}	C_{21}	C_{01}	C_{03}	C_{07}	C_{21}	C_{01}	C_{03}
C_{42}	C_{15}	C_{08}	C_{08}	C_{30}	C_{15}	C_{26}	C_{11}	C_{04}	C_{08}	C_{22}	C_{04}	C_{18}	C_{08}	C_{22}	C_{04}	C_{18}
C_{43}	C_{16}	C_{09}	C_{09}	C_{31}	C_{16}	C_{27}	C_{12}	C_{05}	C_{09}	C_{23}	C_{05}	C_{19}	C_{09}	C_{23}	C_{05}	C_{19}
C_{44}	C_{17}	C_{10}	C_{10}	C_{32}	C_{17}	C_{28}	C_{13}	C_{06}	C_{10}	C_{24}	C_{06}	C_{20}	C_{10}	C_{24}	C_{06}	C_{20}
C_{45}	C_{02}	C_{01}	C_{01}	C_{25}	C_{02}	C_{29}	C_{14}	C_{07}	C_{01}	C_{03}	C_{07}	C_{21}	C_{01}	C_{03}	C_{07}	C_{21}
C_{46}	C_{11}	C_{04}	C_{04}	C_{26}	C_{11}	C_{30}	C_{15}	C_{08}	C_{04}	C_{18}	C_{08}	C_{22}	C_{04}	C_{18}	C_{08}	C_{22}
C_{47}	C_{12}	C_{05}	C_{05}	C_{27}	C_{12}	C_{31}	C_{16}	C_{09}	C_{05}	C_{19}	C_{09}	C_{23}	C_{05}	C_{19}	C_{09}	C_{23}
C_{48}	C_{13}	C_{06}	C_{06}	C_{28}	C_{13}	C_{32}	C_{17}	C_{10}	C_{06}	C_{20}	C_{10}	C_{24}	C_{06}	C_{20}	C_{10}	C_{24}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
C_{25}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	C_{07}	C_{21}	C_{01}	C_{03}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}
C_{26}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	C_{08}	C_{22}	C_{04}	C_{18}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}
C_{27}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	C_{09}	C_{23}	C_{05}	C_{19}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}
C_{28}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	C_{10}	C_{24}	C_{06}	C_{20}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}
C_{29}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}	C_{01}	C_{03}	C_{07}	C_{21}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}
C_{30}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}	C_{04}	C_{18}	C_{08}	C_{22}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}
C_{31}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}	C_{05}	C_{19}	C_{09}	C_{23}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}
C_{32}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}	C_{06}	C_{20}	C_{10}	C_{24}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}
C_{33}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	C_{07}	C_{21}	C_{01}	C_{03}	C_{03}	C_{21}	C_{01}	C_{07}	C_{33}	C_{37}
C_{34}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	C_{08}	C_{22}	C_{04}	C_{18}	C_{18}	C_{22}	C_{04}	C_{08}	C_{34}	C_{38}
C_{35}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	C_{09}	C_{23}	C_{05}	C_{19}	C_{19}	C_{23}	C_{05}	C_{09}	C_{35}	C_{39}
C_{36}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	C_{10}	C_{24}	C_{06}	C_{20}	C_{20}	C_{24}	C_{06}	C_{10}	C_{36}	C_{40}
C_{37}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}	C_{01}	C_{03}	C_{07}	C_{21}	C_{21}	C_{03}	C_{07}	C_{01}	C_{37}	C_{33}
C_{38}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}	C_{04}	C_{18}	C_{08}	C_{22}	C_{22}	C_{18}	C_{08}	C_{04}	C_{38}	C_{34}
C_{39}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}	C_{05}	C_{19}	C_{09}	C_{23}	C_{23}	C_{19}	C_{09}	C_{05}	C_{39}	C_{35}
C_{40}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}	C_{06}	C_{20}	C_{10}	C_{24}	C_{24}	C_{20}	C_{10}	C_{06}	C_{40}	C_{36}
C_{41}	C_{03}	C_{21}	C_{01}	C_{07}	C_{33}	C_{37}	D_{01}	D_{03}	D_{04}	D_{04}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}
C_{42}	C_{18}	C_{22}	C_{04}	C_{08}	C_{34}	C_{38}	D_{01}	D_{03}	D_{04}	D_{04}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}
C_{43}	C_{19}	C_{23}	C_{05}	C_{09}	C_{35}	C_{39}	D_{01}	D_{03}	D_{04}	D_{04}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}
C_{44}	C_{20}	C_{24}	C_{06}	C_{10}	C_{36}	C_{40}	D_{01}	D_{03}	D_{04}	D_{04}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}
C_{45}	C_{21}	C_{03}	C_{07}	C_{01}	C_{37}	C_{33}	D_{01}	D_{03}	D_{04}	D_{04}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}
C_{46}	C_{22}	C_{18}	C_{08}	C_{04}	C_{38}	C_{34}	D_{01}	D_{03}	D_{04}	D_{04}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}
C_{47}	C_{23}	C_{19}	C_{09}	C_{05}	C_{39}	C_{35}	D_{01}	D_{03}	D_{04}	D_{04}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}
C_{48}	C_{24}	C_{20}	C_{10}	C_{06}	C_{40}	C_{36}	D_{01}	D_{03}	D_{04}	D_{04}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
C_{25}	C_{03}	C_{21}	C_{01}	C_{07}	C_{33}	C_{37}	D_{02}	D_{03}	D_{04}	D_{04}	C_{02}	C_{03}	C_{14}	C_{21}	C_{41}	C_{02}
C_{26}	C_{18}	C_{22}	C_{04}	C_{08}	C_{34}	C_{38}	D_{02}	D_{03}	D_{04}	D_{04}	C_{11}	C_{18}	C_{15}	C_{22}	C_{42}	C_{11}
C_{27}	C_{19}	C_{23}	C_{05}	C_{09}	C_{35}	C_{39}	D_{02}	D_{03}	D_{04}	D_{04}	C_{12}	C_{19}	C_{16}	C_{23}	C_{43}	C_{12}
C_{28}	C_{20}	C_{24}	C_{06}	C_{10}	C_{36}	C_{40}	D_{02}	D_{03}	D_{04}	D_{04}	C_{13}	C_{20}	C_{17}	C_{24}	C_{44}	C_{13}
C_{29}	C_{21}	C_{03}	C_{07}	C_{01}	C_{37}	C_{33}	D_{02}	D_{03}	D_{04}	D_{04}	C_{14}	C_{21}	C_{02}	C_{03}	C_{45}	C_{14}
C_{30}	C_{22}	C_{18}	C_{08}	C_{04}	C_{38}	C_{34}	D_{02}	D_{03}	D_{04}	D_{04}	C_{15}	C_{22}	C_{11}	C_{18}	C_{46}	C_{15}
C_{31}	C_{23}	C_{19}	C_{09}	C_{05}	C_{39}	C_{35}	D_{02}	D_{03}	D_{04}	D_{04}	C_{16}	C_{23}	C_{12}	C_{19}	C_{47}	C_{16}
C_{32}	C_{24}	C_{20}	C_{10}	C_{06}	C_{40}	C_{36}	D_{02}	D_{03}	D_{04}	D_{04}	C_{17}	C_{24}	C_{13}	C_{20}	C_{48}	C_{17}
C_{33}	C_{37}	C_{07}	C_{33}	C_{21}	C_{01}	C_{03}	C_{02}	C_{03}	C_{14}	C_{21}	D_{02}	D_{03}	D_{04}	D_{04}	C_{02}	C_{41}
C_{34}	C_{38}	C_{08}	C_{34}	C_{22}	C_{04}	C_{18}	C_{11}	C_{18}	C_{15}	C_{22}	D_{02}	D_{03}	D_{04}	D_{04}	C_{11}	C_{42}
C_{35}	C_{39}	C_{09}	C_{35}	C_{23}	C_{05}	C_{19}	C_{12}	C_{19}	C_{16}	C_{23}	D_{02}	D_{03}	D_{04}	D_{04}	C_{12}	C_{43}
C_{36}	C_{40}	C_{10}	C_{36}	C_{24}	C_{06}	C_{20}	C_{13}	C_{20}	C_{17}	C_{24}	D_{02}	D_{03}	D_{04}	D_{04}	C_{13}	C_{44}
C_{37}	C_{33}	C_{01}	C_{37}	C_{03}	C_{07}	C_{21}	C_{14}	C_{21}	C_{02}	C_{03}	D_{02}	D_{03}	D_{04}	D_{04}	C_{14}	C_{45}
C_{38}	C_{34}	C_{04}	C_{38}	C_{18}	C_{08}	C_{22}	C_{15}	C_{22}	C_{11}	C_{18}	D_{02}	D_{03}	D_{04}	D_{04}	C_{15}	C_{46}
C_{39}	C_{35}	C_{05}	C_{39}	C_{19}	C_{09}	C_{23}	C_{16}	C_{23}	C_{12}	C_{19}	D_{02}	D_{03}	D_{04}	D_{04}	C_{16}	C_{47}
C_{40}	C_{36}	C_{06}	C_{40}	C_{20}	C_{10}	C_{24}	C_{17}	C_{24}	C_{13}	C_{20}	D_{02}	D_{03}	D_{04}	D_{04}	C_{17}	C_{48}
C_{41}	C_{07}	C_{37}	C_{21}	C_{33}	C_{03}	C_{01}	C_{02}	C_{03}	C_{14}	C_{21}	C_{14}	C_{21}	C_{02}	C_{03}	C_{03}	C_{21}
C_{42}	C_{08}	C_{38}	C_{22}	C_{34}	C_{18}	C_{04}	C_{11}	C_{18}	C_{15}	C_{22}	C_{15}	C_{22}	C_{11}	C_{18}	C_{18}	C_{22}
C_{43}	C_{09}	C_{39}	C_{23}	C_{35}	C_{19}	C_{05}	C_{12}	C_{19}	C_{16}	C_{23}	C_{16}	C_{23}	C_{12}	C_{19}	C_{19}	C_{23}
C_{44}	C_{10}	C_{40}	C_{24}	C_{36}	C_{20}	C_{06}	C_{13}	C_{20}	C_{17}	C_{24}	C_{17}	C_{24}	C_{13}	C_{20}	C_{20}	C_{24}
C_{45}	C_{01}	C_{33}	C_{03}	C_{37}	C_{21}	C_{07}	C_{14}	C_{21}	C_{02}	C_{03}	C_{02}	C_{03}	C_{14}	C_{21}	C_{21}	C_{03}
C_{46}	C_{04}	C_{34}	C_{18}	C_{38}	C_{22}	C_{08}	C_{15}	C_{22}	C_{11}	C_{18}	C_{11}	C_{18}	C_{15}	C_{22}	C_{22}	C_{18}
C_{47}	C_{05}	C_{35}	C_{19}	C_{39}	C_{23}	C_{09}	C_{16}	C_{23}	C_{12}	C_{19}	C_{12}	C_{19}	C_{16}	C_{23}	C_{23}	C_{19}
C_{48}	C_{06}	C_{36}	C_{20}	C_{40}	C_{24}	C_{10}	C_{17}	C_{24}	C_{13}	C_{20}	C_{13}	C_{20}	C_{17}	C_{24}	C_{24}	C_{20}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
C_{25}	C_{45}	C_{03}	C_{14}	C_{21}	C_{14}	C_{21}	C_{02}	C_{03}	C_{45}	C_{14}	C_{41}	C_{21}	C_{02}	C_{03}	C_{03}	C_{21}
C_{26}	C_{46}	C_{18}	C_{15}	C_{22}	C_{15}	C_{22}	C_{11}	C_{18}	C_{46}	C_{15}	C_{42}	C_{22}	C_{11}	C_{18}	C_{18}	C_{22}
C_{27}	C_{47}	C_{19}	C_{16}	C_{23}	C_{16}	C_{23}	C_{12}	C_{19}	C_{47}	C_{16}	C_{43}	C_{23}	C_{12}	C_{19}	C_{19}	C_{23}
C_{28}	C_{48}	C_{20}	C_{17}	C_{24}	C_{17}	C_{24}	C_{13}	C_{20}	C_{48}	C_{17}	C_{44}	C_{24}	C_{13}	C_{20}	C_{20}	C_{24}
C_{29}	C_{41}	C_{21}	C_{02}	C_{03}	C_{02}	C_{03}	C_{14}	C_{21}	C_{41}	C_{02}	C_{45}	C_{03}	C_{14}	C_{21}	C_{21}	C_{03}
C_{30}	C_{42}	C_{22}	C_{11}	C_{18}	C_{11}	C_{18}	C_{15}	C_{22}	C_{42}	C_{11}	C_{46}	C_{18}	C_{15}	C_{22}	C_{22}	C_{18}
C_{31}	C_{43}	C_{23}	C_{12}	C_{19}	C_{12}	C_{19}	C_{16}	C_{23}	C_{43}	C_{12}	C_{47}	C_{19}	C_{16}	C_{23}	C_{23}	C_{19}
C_{32}	C_{44}	C_{24}	C_{13}	C_{20}	C_{13}	C_{20}	C_{17}	C_{24}	C_{44}	C_{13}	C_{48}	C_{20}	C_{17}	C_{24}	C_{24}	C_{20}
C_{33}	C_{03}	C_{45}	C_{21}	C_{14}	C_{14}	C_{21}	C_{02}	C_{03}	C_{03}	C_{21}	C_{02}	C_{14}	C_{41}	C_{45}	C_{45}	C_{14}
C_{34}	C_{18}	C_{46}	C_{22}	C_{15}	C_{15}	C_{22}	C_{11}	C_{18}	C_{18}	C_{22}	C_{11}	C_{15}	C_{42}	C_{46}	C_{46}	C_{15}
C_{35}	C_{19}	C_{47}	C_{23}	C_{16}	C_{16}	C_{23}	C_{12}	C_{19}	C_{19}	C_{23}	C_{12}	C_{16}	C_{43}	C_{47}	C_{47}	C_{16}
C_{36}	C_{20}	C_{48}	C_{24}	C_{17}	C_{17}	C_{24}	C_{13}	C_{20}	C_{20}	C_{24}	C_{13}	C_{17}	C_{44}	C_{48}	C_{48}	C_{17}
C_{37}	C_{21}	C_{41}	C_{03}	C_{02}	C_{02}	C_{03}	C_{14}	C_{21}	C_{21}	C_{03}	C_{14}	C_{02}	C_{45}	C_{41}	C_{41}	C_{02}
C_{38}	C_{22}	C_{42}	C_{18}	C_{11}	C_{11}	C_{18}	C_{15}	C_{22}	C_{22}	C_{18}	C_{15}	C_{11}	C_{46}	C_{42}	C_{42}	C_{11}
C_{39}	C_{23}	C_{43}	C_{19}	C_{12}	C_{12}	C_{19}	C_{16}	C_{23}	C_{23}	C_{19}	C_{16}	C_{12}	C_{47}	C_{43}	C_{43}	C_{12}
C_{40}	C_{24}	C_{44}	C_{20}	C_{13}	C_{13}	C_{20}	C_{17}	C_{24}	C_{24}	C_{20}	C_{17}	C_{13}	C_{48}	C_{44}	C_{44}	C_{13}
C_{41}	C_{02}	C_{14}	C_{41}	C_{45}	D_{02}	D_{03}	D_{04}	D_{04}	C_{02}	C_{41}	C_{03}	C_{45}	C_{21}	C_{14}	C_{14}	C_{45}
C_{42}	C_{11}	C_{15}	C_{42}	C_{46}	D_{02}	D_{03}	D_{04}	D_{04}	C_{11}	C_{42}	C_{18}	C_{46}	C_{22}	C_{15}	C_{15}	C_{46}
C_{43}	C_{12}	C_{16}	C_{43}	C_{47}	D_{02}	D_{03}	D_{04}	D_{04}	C_{12}	C_{43}	C_{19}	C_{47}	C_{23}	C_{16}	C_{16}	C_{47}
C_{44}	C_{13}	C_{17}	C_{44}	C_{48}	D_{02}	D_{03}	D_{04}	D_{04}	C_{13}	C_{44}	C_{20}	C_{48}	C_{24}	C_{17}	C_{17}	C_{48}
C_{45}	C_{14}	C_{02}	C_{45}	C_{41}	D_{02}	D_{03}	D_{04}	D_{04}	C_{14}	C_{45}	C_{21}	C_{41}	C_{03}	C_{02}	C_{02}	C_{41}
C_{46}	C_{15}	C_{11}	C_{46}	C_{42}	D_{02}	D_{03}	D_{04}	D_{04}	C_{15}	C_{46}	C_{22}	C_{42}	C_{18}	C_{11}	C_{11}	C_{42}
C_{47}	C_{16}	C_{12}	C_{47}	C_{43}	D_{02}	D_{03}	D_{04}	D_{04}	C_{16}	C_{47}	C_{23}	C_{43}	C_{19}	C_{12}	C_{12}	C_{43}
C_{48}	C_{17}	C_{13}	C_{48}	C_{44}	D_{02}	D_{03}	D_{04}	D_{04}	C_{17}	C_{48}	C_{24}	C_{44}	C_{20}	C_{13}	C_{13}	C_{44}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
C_{25}	C_{02}	C_{14}	C_{41}	C_{45}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
C_{26}	C_{11}	C_{15}	C_{42}	C_{46}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
C_{27}	C_{12}	C_{16}	C_{43}	C_{47}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
C_{28}	C_{13}	C_{17}	C_{44}	C_{48}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}
C_{29}	C_{14}	C_{02}	C_{45}	C_{41}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}
C_{30}	C_{15}	C_{11}	C_{46}	C_{42}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}
C_{31}	C_{16}	C_{12}	C_{47}	C_{43}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}
C_{32}	C_{17}	C_{13}	C_{48}	C_{44}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}
C_{33}	C_{41}	C_{21}	C_{02}	C_{03}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{34}	C_{42}	C_{22}	C_{11}	C_{18}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{35}	C_{43}	C_{23}	C_{12}	C_{19}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{36}	C_{44}	C_{24}	C_{13}	C_{20}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{37}	C_{45}	C_{03}	C_{14}	C_{21}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{38}	C_{46}	C_{18}	C_{15}	C_{22}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{39}	C_{47}	C_{19}	C_{16}	C_{23}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{40}	C_{48}	C_{20}	C_{17}	C_{24}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{41}	C_{21}	C_{41}	C_{03}	C_{02}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}
C_{42}	C_{22}	C_{42}	C_{18}	C_{11}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}
C_{43}	C_{23}	C_{43}	C_{19}	C_{12}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}
C_{44}	C_{24}	C_{44}	C_{20}	C_{13}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}
C_{45}	C_{03}	C_{45}	C_{21}	C_{14}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}
C_{46}	C_{18}	C_{46}	C_{22}	C_{15}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}
C_{47}	C_{19}	C_{47}	C_{23}	C_{16}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}
C_{48}	C_{20}	C_{48}	C_{24}	C_{17}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
C_{25}	c_{25}	c_{33}	c_{29}	c_{41}	c_{37}	c_{45}	c_{29}	c_{37}	c_{25}	c_{45}	c_{33}	c_{41}	c_{29}	c_{37}	c_{25}	c_{45}
C_{26}	c_{26}	c_{34}	c_{30}	c_{42}	c_{38}	c_{46}	c_{30}	c_{38}	c_{26}	c_{46}	c_{34}	c_{42}	c_{30}	c_{38}	c_{26}	c_{46}
C_{27}	c_{27}	c_{35}	c_{31}	c_{43}	c_{39}	c_{47}	c_{31}	c_{39}	c_{27}	c_{47}	c_{35}	c_{43}	c_{31}	c_{39}	c_{27}	c_{47}
C_{28}	c_{28}	c_{36}	c_{32}	c_{44}	c_{40}	c_{48}	c_{32}	c_{40}	c_{28}	c_{48}	c_{36}	c_{44}	c_{32}	c_{40}	c_{28}	c_{48}
C_{29}	c_{29}	c_{37}	c_{25}	c_{45}	c_{33}	c_{41}	c_{25}	c_{33}	c_{29}	c_{41}	c_{37}	c_{45}	c_{25}	c_{33}	c_{29}	c_{41}
C_{30}	c_{30}	c_{38}	c_{26}	c_{46}	c_{34}	c_{42}	c_{26}	c_{34}	c_{30}	c_{42}	c_{38}	c_{46}	c_{26}	c_{34}	c_{30}	c_{42}
C_{31}	c_{31}	c_{39}	c_{27}	c_{47}	c_{35}	c_{43}	c_{27}	c_{35}	c_{31}	c_{43}	c_{39}	c_{47}	c_{27}	c_{35}	c_{31}	c_{43}
C_{32}	c_{32}	c_{40}	c_{28}	c_{48}	c_{36}	c_{44}	c_{28}	c_{36}	c_{32}	c_{44}	c_{40}	c_{48}	c_{28}	c_{36}	c_{32}	c_{44}
C_{33}	c_{33}	c_{25}	c_{41}	c_{29}	c_{45}	c_{37}	c_{29}	c_{37}	c_{25}	c_{45}	c_{33}	c_{41}	c_{41}	c_{45}	c_{33}	c_{37}
C_{34}	c_{34}	c_{26}	c_{42}	c_{30}	c_{46}	c_{38}	c_{30}	c_{38}	c_{26}	c_{46}	c_{34}	c_{42}	c_{42}	c_{46}	c_{34}	c_{38}
C_{35}	c_{35}	c_{27}	c_{43}	c_{31}	c_{47}	c_{39}	c_{31}	c_{39}	c_{27}	c_{47}	c_{35}	c_{43}	c_{43}	c_{47}	c_{35}	c_{39}
C_{36}	c_{36}	c_{28}	c_{44}	c_{32}	c_{48}	c_{40}	c_{32}	c_{40}	c_{28}	c_{48}	c_{36}	c_{44}	c_{44}	c_{48}	c_{36}	c_{40}
C_{37}	c_{37}	c_{29}	c_{45}	c_{25}	c_{41}	c_{33}	c_{25}	c_{33}	c_{29}	c_{41}	c_{37}	c_{45}	c_{45}	c_{41}	c_{37}	c_{33}
C_{38}	c_{38}	c_{30}	c_{46}	c_{26}	c_{42}	c_{34}	c_{26}	c_{34}	c_{30}	c_{42}	c_{38}	c_{46}	c_{46}	c_{42}	c_{38}	c_{34}
C_{39}	c_{39}	c_{31}	c_{47}	c_{27}	c_{43}	c_{35}	c_{27}	c_{35}	c_{31}	c_{43}	c_{39}	c_{47}	c_{47}	c_{43}	c_{39}	c_{35}
C_{40}	c_{40}	c_{32}	c_{48}	c_{28}	c_{44}	c_{36}	c_{28}	c_{36}	c_{32}	c_{44}	c_{40}	c_{48}	c_{48}	c_{44}	c_{40}	c_{36}
C_{41}	c_{41}	c_{45}	c_{33}	c_{37}	c_{25}	c_{29}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{33}	c_{25}	c_{41}	c_{29}
C_{42}	c_{42}	c_{46}	c_{34}	c_{38}	c_{26}	c_{30}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{34}	c_{26}	c_{42}	c_{30}
C_{43}	c_{43}	c_{47}	c_{35}	c_{39}	c_{27}	c_{31}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{35}	c_{27}	c_{43}	c_{31}
C_{44}	c_{44}	c_{48}	c_{36}	c_{40}	c_{28}	c_{32}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{36}	c_{28}	c_{44}	c_{32}
C_{45}	c_{45}	c_{41}	c_{37}	c_{33}	c_{29}	c_{25}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{37}	c_{29}	c_{45}	c_{25}
C_{46}	c_{46}	c_{42}	c_{38}	c_{34}	c_{30}	c_{26}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{38}	c_{30}	c_{46}	c_{26}
C_{47}	c_{47}	c_{43}	c_{39}	c_{35}	c_{31}	c_{27}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{39}	c_{31}	c_{47}	c_{27}
C_{48}	c_{48}	c_{44}	c_{40}	c_{36}	c_{32}	c_{28}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	c_{40}	c_{32}	c_{48}	c_{28}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
C_{25}	C_{33}	C_{41}	C_{41}	C_{45}	C_{33}	C_{37}	C_{25}	C_{29}	D_{01}	D_{02}	D_{03}	D_{01}	C_{01}	C_{07}	D_{04}	D_{04}
C_{26}	C_{34}	C_{42}	C_{42}	C_{46}	C_{34}	C_{38}	C_{26}	C_{30}	D_{01}	D_{02}	D_{03}	D_{01}	C_{04}	C_{08}	D_{04}	D_{04}
C_{27}	C_{35}	C_{43}	C_{43}	C_{47}	C_{35}	C_{39}	C_{27}	C_{31}	D_{01}	D_{02}	D_{03}	D_{01}	C_{05}	C_{09}	D_{04}	D_{04}
C_{28}	C_{36}	C_{44}	C_{44}	C_{48}	C_{36}	C_{40}	C_{28}	C_{32}	D_{01}	D_{02}	D_{03}	D_{01}	C_{06}	C_{10}	D_{04}	D_{04}
C_{29}	C_{37}	C_{45}	C_{45}	C_{41}	C_{37}	C_{33}	C_{29}	C_{25}	D_{01}	D_{02}	D_{03}	D_{01}	C_{07}	C_{01}	D_{04}	D_{04}
C_{30}	C_{38}	C_{46}	C_{46}	C_{42}	C_{38}	C_{34}	C_{30}	C_{26}	D_{01}	D_{02}	D_{03}	D_{01}	C_{08}	C_{04}	D_{04}	D_{04}
C_{31}	C_{39}	C_{47}	C_{47}	C_{43}	C_{39}	C_{35}	C_{31}	C_{27}	D_{01}	D_{02}	D_{03}	D_{01}	C_{09}	C_{05}	D_{04}	D_{04}
C_{32}	C_{40}	C_{48}	C_{48}	C_{44}	C_{40}	C_{36}	C_{32}	C_{28}	D_{01}	D_{02}	D_{03}	D_{01}	C_{10}	C_{06}	D_{04}	D_{04}
C_{33}	C_{25}	C_{29}	C_{29}	C_{37}	C_{25}	C_{45}	C_{33}	C_{41}	D_{01}	D_{02}	D_{03}	C_{01}	D_{01}	C_{07}	D_{04}	C_{07}
C_{34}	C_{26}	C_{30}	C_{30}	C_{38}	C_{26}	C_{46}	C_{34}	C_{42}	D_{01}	D_{02}	D_{03}	C_{04}	D_{01}	C_{08}	D_{04}	C_{08}
C_{35}	C_{27}	C_{31}	C_{31}	C_{39}	C_{27}	C_{47}	C_{35}	C_{43}	D_{01}	D_{02}	D_{03}	C_{05}	D_{01}	C_{09}	D_{04}	C_{09}
C_{36}	C_{28}	C_{32}	C_{32}	C_{40}	C_{28}	C_{48}	C_{36}	C_{44}	D_{01}	D_{02}	D_{03}	C_{06}	D_{01}	C_{10}	D_{04}	C_{10}
C_{37}	C_{29}	C_{25}	C_{25}	C_{33}	C_{29}	C_{41}	C_{37}	C_{45}	D_{01}	D_{02}	D_{03}	C_{07}	D_{01}	C_{01}	D_{04}	C_{01}
C_{38}	C_{30}	C_{26}	C_{26}	C_{34}	C_{30}	C_{42}	C_{38}	C_{46}	D_{01}	D_{02}	D_{03}	C_{08}	D_{01}	C_{04}	D_{04}	C_{04}
C_{39}	C_{31}	C_{27}	C_{27}	C_{35}	C_{31}	C_{43}	C_{39}	C_{47}	D_{01}	D_{02}	D_{03}	C_{09}	D_{01}	C_{05}	D_{04}	C_{05}
C_{40}	C_{32}	C_{28}	C_{28}	C_{36}	C_{32}	C_{44}	C_{40}	C_{48}	D_{01}	D_{02}	D_{03}	C_{10}	D_{01}	C_{06}	D_{04}	C_{06}
C_{41}	C_{45}	C_{37}	C_{37}	C_{29}	C_{45}	C_{25}	C_{41}	C_{33}	D_{01}	D_{02}	D_{03}	C_{01}	C_{07}	D_{01}	D_{04}	C_{07}
C_{42}	C_{46}	C_{38}	C_{38}	C_{30}	C_{46}	C_{26}	C_{42}	C_{34}	D_{01}	D_{02}	D_{03}	C_{04}	C_{08}	D_{01}	D_{04}	C_{08}
C_{43}	C_{47}	C_{39}	C_{39}	C_{31}	C_{47}	C_{27}	C_{43}	C_{35}	D_{01}	D_{02}	D_{03}	C_{05}	C_{09}	D_{01}	D_{04}	C_{09}
C_{44}	C_{48}	C_{40}	C_{40}	C_{32}	C_{48}	C_{28}	C_{44}	C_{36}	D_{01}	D_{02}	D_{03}	C_{06}	C_{10}	D_{01}	D_{04}	C_{10}
C_{45}	C_{41}	C_{33}	C_{33}	C_{25}	C_{41}	C_{29}	C_{45}	C_{37}	D_{01}	D_{02}	D_{03}	C_{07}	C_{01}	D_{01}	D_{04}	C_{01}
C_{46}	C_{42}	C_{34}	C_{34}	C_{26}	C_{42}	C_{30}	C_{46}	C_{38}	D_{01}	D_{02}	D_{03}	C_{08}	C_{04}	D_{01}	D_{04}	C_{04}
C_{47}	C_{43}	C_{35}	C_{35}	C_{27}	C_{43}	C_{31}	C_{47}	C_{39}	D_{01}	D_{02}	D_{03}	C_{09}	C_{05}	D_{01}	D_{04}	C_{05}
C_{48}	C_{44}	C_{36}	C_{36}	C_{28}	C_{44}	C_{32}	C_{48}	C_{40}	D_{01}	D_{02}	D_{03}	C_{10}	C_{06}	D_{01}	D_{04}	C_{06}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
C_{25}	C_{07}	C_{01}	D_{02}	C_{02}	C_{14}	D_{04}	D_{04}	C_{14}	C_{02}	D_{03}	C_{03}	C_{21}	D_{04}	D_{04}	C_{21}	C_{03}
C_{26}	C_{08}	C_{04}	D_{02}	C_{11}	C_{15}	D_{04}	D_{04}	C_{15}	C_{11}	D_{03}	C_{18}	C_{22}	D_{04}	D_{04}	C_{22}	C_{18}
C_{27}	C_{09}	C_{05}	D_{02}	C_{12}	C_{16}	D_{04}	D_{04}	C_{16}	C_{12}	D_{03}	C_{19}	C_{23}	D_{04}	D_{04}	C_{23}	C_{19}
C_{28}	C_{10}	C_{06}	D_{02}	C_{13}	C_{17}	D_{04}	D_{04}	C_{17}	C_{13}	D_{03}	C_{20}	C_{24}	D_{04}	D_{04}	C_{24}	C_{20}
C_{29}	C_{01}	C_{07}	D_{02}	C_{14}	C_{02}	D_{04}	D_{04}	C_{02}	C_{14}	D_{03}	C_{21}	C_{03}	D_{04}	D_{04}	C_{03}	C_{21}
C_{30}	C_{04}	C_{08}	D_{02}	C_{15}	C_{11}	D_{04}	D_{04}	C_{11}	C_{15}	D_{03}	C_{22}	C_{18}	D_{04}	D_{04}	C_{18}	C_{22}
C_{31}	C_{05}	C_{09}	D_{02}	C_{16}	C_{12}	D_{04}	D_{04}	C_{12}	C_{16}	D_{03}	C_{03}	C_{19}	D_{04}	D_{04}	C_{19}	C_{23}
C_{32}	C_{06}	C_{10}	D_{02}	C_{17}	C_{13}	D_{04}	D_{04}	C_{13}	C_{17}	D_{03}	C_{24}	C_{20}	D_{04}	D_{04}	C_{20}	C_{24}
C_{33}	D_{04}	C_{01}	C_{02}	D_{02}	C_{14}	D_{04}	C_{14}	D_{04}	C_{02}	C_{03}	D_{03}	C_{21}	D_{04}	C_{21}	D_{04}	C_{03}
C_{34}	D_{04}	C_{04}	C_{11}	D_{02}	C_{15}	D_{04}	C_{15}	D_{04}	C_{11}	C_{18}	D_{03}	C_{22}	D_{04}	C_{22}	D_{04}	C_{18}
C_{35}	D_{04}	C_{05}	C_{12}	D_{02}	C_{16}	D_{04}	C_{16}	D_{04}	C_{12}	C_{19}	D_{03}	C_{23}	D_{04}	C_{23}	D_{04}	C_{19}
C_{36}	D_{04}	C_{06}	C_{13}	D_{02}	C_{17}	D_{04}	C_{17}	D_{04}	C_{13}	C_{20}	D_{03}	C_{24}	D_{04}	C_{24}	D_{04}	C_{20}
C_{37}	D_{04}	C_{07}	C_{14}	D_{02}	C_{02}	D_{04}	C_{02}	D_{04}	C_{14}	C_{21}	D_{03}	C_{03}	D_{04}	C_{03}	D_{04}	C_{21}
C_{38}	D_{04}	C_{08}	C_{15}	D_{02}	C_{11}	D_{04}	C_{11}	D_{04}	C_{15}	C_{22}	D_{03}	C_{18}	D_{04}	C_{18}	D_{04}	C_{22}
C_{39}	D_{04}	C_{09}	C_{16}	D_{02}	C_{12}	D_{04}	C_{12}	D_{04}	C_{16}	C_{23}	D_{03}	C_{19}	D_{04}	C_{19}	D_{04}	C_{23}
C_{40}	D_{04}	C_{10}	C_{17}	D_{02}	C_{13}	D_{04}	C_{13}	D_{04}	C_{17}	C_{24}	D_{03}	C_{20}	D_{04}	C_{20}	D_{04}	C_{24}
C_{41}	C_{01}	D_{04}	C_{02}	C_{14}	D_{02}	D_{04}	C_{14}	C_{02}	D_{04}	C_{03}	C_{21}	D_{03}	D_{04}	C_{21}	C_{03}	D_{04}
C_{42}	C_{04}	D_{04}	C_{11}	C_{15}	D_{02}	D_{04}	C_{15}	C_{11}	D_{04}	C_{18}	C_{22}	D_{03}	D_{04}	C_{22}	C_{18}	D_{04}
C_{43}	C_{05}	D_{04}	C_{12}	C_{16}	D_{02}	D_{04}	C_{16}	C_{12}	D_{04}	C_{19}	C_{23}	D_{03}	D_{04}	C_{23}	C_{19}	D_{04}
C_{44}	C_{06}	D_{04}	C_{13}	C_{17}	D_{02}	D_{04}	C_{17}	C_{13}	D_{04}	C_{20}	C_{24}	D_{03}	D_{04}	C_{24}	C_{20}	D_{04}
C_{45}	C_{07}	D_{04}	C_{14}	C_{02}	D_{02}	D_{04}	C_{02}	C_{14}	D_{04}	C_{21}	C_{03}	D_{03}	D_{04}	C_{03}	C_{21}	D_{04}
C_{46}	C_{08}	D_{04}	C_{15}	C_{11}	D_{02}	D_{04}	C_{11}	C_{15}	D_{04}	C_{22}	C_{18}	D_{03}	D_{04}	C_{18}	C_{22}	D_{04}
C_{47}	C_{09}	D_{04}	C_{16}	C_{12}	D_{02}	D_{04}	C_{12}	C_{16}	D_{04}	C_{23}	C_{19}	D_{03}	D_{04}	C_{19}	C_{23}	D_{04}
C_{48}	C_{10}	D_{04}	C_{17}	C_{13}	D_{02}	D_{04}	C_{13}	C_{17}	D_{04}	C_{24}	C_{20}	D_{03}	D_{04}	C_{20}	C_{24}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
C_{25}	D_{01}	D_{01}	C_{25}	C_{29}	D_{02}	D_{02}	C_{29}	C_{25}	D_{01}	D_{01}	C_{33}	C_{37}	D_{03}	D_{03}	C_{37}	C_{33}
C_{26}	D_{01}	D_{01}	C_{26}	C_{30}	D_{02}	D_{02}	C_{30}	C_{26}	D_{01}	D_{01}	C_{34}	C_{38}	D_{03}	D_{03}	C_{38}	C_{34}
C_{27}	D_{01}	D_{01}	C_{27}	C_{31}	D_{02}	D_{02}	C_{31}	C_{27}	D_{01}	D_{01}	C_{35}	C_{39}	D_{03}	D_{03}	C_{39}	C_{35}
C_{28}	D_{01}	D_{01}	C_{28}	C_{32}	D_{02}	D_{02}	C_{32}	C_{28}	D_{01}	D_{01}	C_{36}	C_{40}	D_{03}	D_{03}	C_{40}	C_{36}
C_{29}	D_{01}	D_{01}	C_{29}	C_{25}	D_{02}	D_{02}	C_{25}	C_{29}	D_{01}	D_{01}	C_{37}	C_{33}	D_{03}	D_{03}	C_{33}	C_{37}
C_{30}	D_{01}	D_{01}	C_{30}	C_{26}	D_{02}	D_{02}	C_{26}	C_{30}	D_{01}	D_{01}	C_{38}	C_{34}	D_{03}	D_{03}	C_{34}	C_{38}
C_{31}	D_{01}	D_{01}	C_{31}	C_{27}	D_{02}	D_{02}	C_{27}	C_{31}	D_{01}	D_{01}	C_{39}	C_{35}	D_{03}	D_{03}	C_{35}	C_{39}
C_{32}	D_{01}	D_{01}	C_{32}	C_{28}	D_{02}	D_{02}	C_{28}	C_{32}	D_{01}	D_{01}	C_{40}	C_{36}	D_{03}	D_{03}	C_{36}	C_{40}
C_{33}	D_{01}	C_{25}	D_{01}	C_{29}	D_{02}	C_{29}	D_{02}	C_{25}	D_{01}	C_{33}	D_{01}	C_{37}	D_{03}	C_{37}	D_{03}	C_{33}
C_{34}	D_{01}	C_{26}	D_{01}	C_{30}	D_{02}	C_{30}	D_{02}	C_{26}	D_{01}	C_{34}	D_{01}	C_{38}	D_{03}	C_{38}	D_{03}	C_{34}
C_{35}	D_{01}	C_{27}	D_{01}	C_{31}	D_{02}	C_{31}	D_{02}	C_{27}	D_{01}	C_{35}	D_{01}	C_{39}	D_{03}	C_{39}	D_{03}	C_{35}
C_{36}	D_{01}	C_{28}	D_{01}	C_{32}	D_{02}	C_{32}	D_{02}	C_{28}	D_{01}	C_{36}	D_{01}	C_{40}	D_{03}	C_{40}	D_{03}	C_{36}
C_{37}	D_{01}	C_{29}	D_{01}	C_{25}	D_{02}	C_{25}	D_{02}	C_{29}	D_{01}	C_{37}	D_{01}	C_{33}	D_{03}	C_{33}	D_{03}	C_{37}
C_{38}	D_{01}	C_{30}	D_{01}	C_{26}	D_{02}	C_{26}	D_{02}	C_{30}	D_{01}	C_{38}	D_{01}	C_{34}	D_{03}	C_{34}	D_{03}	C_{38}
C_{39}	D_{01}	C_{31}	D_{01}	C_{27}	D_{02}	C_{27}	D_{02}	C_{31}	D_{01}	C_{39}	D_{01}	C_{35}	D_{03}	C_{35}	D_{03}	C_{39}
C_{40}	D_{01}	C_{32}	D_{01}	C_{28}	D_{02}	C_{28}	D_{02}	C_{32}	D_{01}	C_{40}	D_{01}	C_{36}	D_{03}	C_{36}	D_{03}	C_{40}
C_{41}	D_{01}	C_{25}	C_{29}	D_{01}	D_{02}	C_{29}	C_{25}	D_{02}	D_{01}	C_{33}	C_{37}	D_{01}	D_{03}	C_{37}	C_{33}	D_{03}
C_{42}	D_{01}	C_{26}	C_{30}	D_{01}	D_{02}	C_{30}	C_{26}	D_{02}	D_{01}	C_{34}	C_{38}	D_{01}	D_{03}	C_{38}	C_{34}	D_{03}
C_{43}	D_{01}	C_{27}	C_{31}	D_{01}	D_{02}	C_{31}	C_{27}	D_{02}	D_{01}	C_{35}	C_{39}	D_{01}	D_{03}	C_{39}	C_{35}	D_{03}
C_{44}	D_{01}	C_{28}	C_{32}	D_{01}	D_{02}	C_{32}	C_{28}	D_{02}	D_{01}	C_{36}	C_{40}	D_{01}	D_{03}	C_{40}	C_{36}	D_{03}
C_{45}	D_{01}	C_{29}	C_{25}	D_{01}	D_{02}	C_{25}	C_{29}	D_{02}	D_{01}	C_{37}	C_{33}	D_{01}	D_{03}	C_{33}	C_{37}	D_{03}
C_{46}	D_{01}	C_{30}	C_{26}	D_{01}	D_{02}	C_{26}	C_{30}	D_{02}	D_{01}	C_{38}	C_{34}	D_{01}	D_{03}	C_{34}	C_{38}	D_{03}
C_{47}	D_{01}	C_{31}	C_{27}	D_{01}	D_{02}	C_{27}	C_{31}	D_{02}	D_{01}	C_{39}	C_{35}	D_{01}	D_{03}	C_{35}	C_{39}	D_{03}
C_{48}	D_{01}	C_{32}	C_{28}	D_{01}	D_{02}	C_{28}	C_{32}	D_{02}	D_{01}	C_{40}	C_{36}	D_{01}	D_{03}	C_{36}	C_{40}	D_{03}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
C_{25}	D_{02}	D_{02}	C_{41}	C_{45}	D_{03}	D_{03}	C_{45}	C_{41}	D_{01}	D_{02}	C_{25}	C_{29}	C_{25}	C_{29}	D_{01}	D_{03}
C_{26}	D_{02}	D_{02}	C_{42}	C_{46}	D_{03}	D_{03}	C_{46}	C_{42}	D_{01}	D_{02}	C_{26}	C_{30}	C_{26}	C_{30}	D_{01}	D_{03}
C_{27}	D_{02}	D_{02}	C_{43}	C_{47}	D_{03}	D_{03}	C_{47}	C_{43}	D_{01}	D_{02}	C_{27}	C_{31}	C_{27}	C_{31}	D_{02}	D_{03}
C_{28}	D_{02}	D_{02}	C_{44}	C_{48}	D_{03}	D_{03}	C_{48}	C_{44}	D_{01}	D_{02}	C_{28}	C_{32}	C_{28}	C_{32}	D_{01}	D_{03}
C_{29}	D_{02}	D_{02}	C_{45}	C_{41}	D_{03}	D_{03}	C_{41}	C_{45}	D_{01}	D_{02}	C_{29}	C_{25}	C_{29}	C_{25}	D_{01}	D_{03}
C_{30}	D_{02}	D_{02}	C_{46}	C_{42}	D_{03}	D_{03}	C_{42}	C_{46}	D_{01}	D_{02}	C_{30}	C_{26}	C_{30}	C_{26}	D_{01}	D_{03}
C_{31}	D_{02}	D_{02}	C_{47}	C_{43}	D_{03}	D_{03}	C_{43}	C_{47}	D_{01}	D_{02}	C_{31}	C_{27}	C_{31}	C_{27}	D_{01}	D_{03}
C_{32}	D_{02}	D_{02}	C_{48}	C_{44}	D_{03}	D_{03}	C_{44}	C_{48}	D_{01}	D_{02}	C_{32}	C_{28}	C_{32}	C_{28}	D_{01}	D_{03}
C_{33}	D_{02}	C_{41}	D_{02}	C_{45}	D_{03}	C_{45}	D_{03}	C_{41}	C_{25}	C_{29}	D_{01}	D_{02}	C_{25}	C_{29}	C_{33}	C_{37}
C_{34}	D_{02}	C_{42}	D_{02}	C_{46}	D_{03}	C_{46}	D_{03}	C_{42}	C_{26}	C_{30}	D_{01}	D_{02}	C_{26}	C_{30}	C_{34}	C_{38}
C_{35}	D_{02}	C_{43}	D_{02}	C_{47}	D_{03}	C_{47}	D_{03}	C_{43}	C_{27}	C_{31}	D_{01}	D_{02}	C_{27}	C_{31}	C_{35}	C_{39}
C_{36}	D_{02}	C_{44}	D_{02}	C_{48}	D_{03}	C_{48}	D_{03}	C_{44}	C_{28}	C_{32}	D_{01}	D_{02}	C_{28}	C_{32}	C_{36}	C_{40}
C_{37}	D_{02}	C_{45}	D_{02}	C_{41}	D_{03}	C_{41}	D_{03}	C_{45}	C_{29}	C_{25}	D_{01}	D_{02}	C_{29}	C_{25}	C_{37}	C_{33}
C_{38}	D_{02}	C_{46}	D_{02}	C_{42}	D_{03}	C_{42}	D_{03}	C_{46}	C_{30}	C_{26}	D_{01}	D_{02}	C_{30}	C_{26}	C_{38}	C_{34}
C_{39}	D_{02}	C_{47}	D_{02}	C_{43}	D_{03}	C_{43}	D_{03}	C_{47}	C_{31}	C_{27}	D_{01}	D_{02}	C_{31}	C_{27}	C_{39}	C_{35}
C_{40}	D_{02}	C_{48}	D_{02}	C_{44}	D_{03}	C_{44}	D_{03}	C_{48}	C_{32}	C_{28}	D_{01}	D_{02}	C_{32}	C_{28}	C_{40}	C_{36}
C_{41}	D_{02}	C_{41}	C_{45}	D_{02}	D_{03}	C_{45}	C_{41}	D_{03}	C_{25}	C_{29}	C_{29}	C_{25}	D_{02}	D_{01}	C_{33}	C_{37}
C_{42}	D_{02}	C_{42}	C_{46}	D_{02}	D_{03}	C_{46}	C_{42}	D_{03}	C_{26}	C_{30}	C_{30}	C_{26}	D_{02}	D_{01}	C_{34}	C_{38}
C_{43}	D_{02}	C_{43}	C_{47}	D_{02}	D_{03}	C_{47}	C_{43}	D_{03}	C_{27}	C_{31}	C_{31}	C_{27}	D_{02}	D_{01}	C_{35}	C_{39}
C_{44}	D_{02}	C_{44}	C_{48}	D_{02}	D_{03}	C_{48}	C_{44}	D_{03}	C_{28}	C_{32}	C_{32}	C_{28}	D_{02}	D_{01}	C_{36}	C_{40}
C_{45}	D_{02}	C_{45}	C_{41}	D_{02}	D_{03}	C_{41}	C_{45}	D_{03}	C_{29}	C_{25}	C_{25}	C_{29}	D_{02}	D_{01}	C_{37}	C_{33}
C_{46}	D_{02}	C_{46}	C_{42}	D_{02}	D_{03}	C_{42}	C_{46}	D_{03}	C_{30}	C_{26}	C_{26}	C_{30}	D_{02}	D_{01}	C_{38}	C_{34}
C_{47}	D_{02}	C_{47}	C_{43}	D_{02}	D_{03}	C_{43}	C_{47}	D_{03}	C_{31}	C_{27}	C_{27}	C_{31}	D_{02}	D_{01}	C_{39}	C_{35}
C_{48}	D_{02}	C_{48}	C_{44}	D_{02}	D_{03}	C_{44}	C_{48}	D_{03}	C_{32}	C_{28}	C_{28}	C_{32}	D_{02}	D_{01}	C_{40}	C_{36}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{57}	C_{58}	C_{59}	C_{60}	C_{61}	C_{62}	C_{63}	C_{64}	C_{65}	C_{66}	C_{67}	C_{68}	C_{69}	C_{70}	C_{71}	C_{72}
C_{25}	C_{33}	C_{37}	C_{33}	C_{37}	D_{01}	D_{04}	C_{01}	C_{07}	C_{01}	C_{07}	D_{02}	D_{03}	C_{41}	C_{45}	C_{41}	C_{45}
C_{26}	C_{34}	C_{38}	C_{34}	C_{38}	D_{01}	D_{04}	C_{04}	C_{08}	C_{04}	C_{08}	D_{02}	D_{03}	C_{42}	C_{46}	C_{42}	C_{46}
C_{27}	C_{35}	C_{39}	C_{35}	C_{39}	D_{01}	D_{04}	C_{05}	C_{09}	C_{05}	C_{09}	D_{02}	D_{03}	C_{43}	C_{47}	C_{43}	C_{47}
C_{28}	C_{36}	C_{40}	C_{36}	C_{40}	D_{01}	D_{04}	C_{06}	C_{10}	C_{06}	C_{10}	D_{02}	D_{03}	C_{44}	C_{48}	C_{44}	C_{48}
C_{29}	C_{37}	C_{33}	C_{37}	C_{33}	D_{01}	D_{04}	C_{07}	C_{01}	C_{07}	C_{01}	D_{02}	D_{03}	C_{45}	C_{41}	C_{45}	C_{41}
C_{30}	C_{38}	C_{34}	C_{38}	C_{34}	D_{01}	D_{04}	C_{08}	C_{04}	C_{08}	C_{04}	D_{02}	D_{03}	C_{46}	C_{42}	C_{46}	C_{42}
C_{31}	C_{39}	C_{35}	C_{39}	C_{35}	D_{01}	D_{04}	C_{09}	C_{05}	C_{09}	C_{05}	D_{02}	D_{03}	C_{47}	C_{43}	C_{47}	C_{43}
C_{32}	C_{40}	C_{36}	C_{40}	C_{36}	D_{01}	D_{04}	C_{10}	C_{06}	C_{10}	C_{06}	D_{02}	D_{03}	C_{48}	C_{44}	C_{48}	C_{44}
C_{33}	D_{01}	D_{03}	C_{33}	C_{37}	C_{01}	C_{07}	D_{01}	D_{04}	C_{01}	C_{07}	C_{41}	C_{45}	D_{02}	D_{03}	C_{41}	C_{45}
C_{34}	D_{01}	D_{03}	C_{34}	C_{38}	C_{04}	C_{08}	D_{01}	D_{04}	C_{04}	C_{08}	C_{42}	C_{46}	D_{02}	D_{03}	C_{42}	C_{46}
C_{35}	D_{01}	D_{03}	C_{35}	C_{39}	C_{05}	C_{09}	D_{01}	D_{04}	C_{05}	C_{09}	C_{43}	C_{47}	D_{02}	D_{03}	C_{43}	C_{47}
C_{36}	D_{01}	D_{03}	C_{36}	C_{40}	C_{06}	C_{10}	D_{01}	D_{04}	C_{06}	C_{10}	C_{44}	C_{48}	D_{02}	D_{03}	C_{44}	C_{48}
C_{37}	D_{01}	D_{03}	C_{37}	C_{33}	C_{07}	C_{01}	D_{01}	D_{04}	C_{07}	C_{01}	C_{45}	C_{41}	D_{02}	D_{03}	C_{45}	C_{41}
C_{38}	D_{01}	D_{03}	C_{38}	C_{34}	C_{08}	C_{04}	D_{01}	D_{04}	C_{08}	C_{04}	C_{46}	C_{42}	D_{02}	D_{03}	C_{46}	C_{42}
C_{39}	D_{01}	D_{03}	C_{39}	C_{35}	C_{09}	C_{05}	D_{01}	D_{04}	C_{09}	C_{05}	C_{47}	C_{43}	D_{02}	D_{03}	C_{47}	C_{43}
C_{40}	D_{01}	D_{03}	C_{40}	C_{36}	C_{10}	C_{06}	D_{01}	D_{04}	C_{10}	C_{06}	C_{48}	C_{44}	D_{02}	D_{03}	C_{48}	C_{44}
C_{41}	C_{37}	C_{33}	D_{03}	D_{01}	C_{01}	C_{07}	C_{07}	C_{01}	D_{04}	D_{01}	C_{41}	C_{45}	C_{45}	C_{41}	D_{03}	D_{02}
C_{42}	C_{38}	C_{34}	D_{03}	D_{01}	C_{04}	C_{08}	C_{08}	C_{04}	D_{04}	D_{01}	C_{42}	C_{46}	C_{46}	C_{42}	D_{03}	D_{02}
C_{43}	C_{39}	C_{35}	D_{03}	D_{01}	C_{05}	C_{09}	C_{09}	C_{05}	D_{04}	D_{01}	C_{43}	C_{47}	C_{47}	C_{43}	D_{03}	D_{02}
C_{44}	C_{40}	C_{36}	D_{03}	D_{01}	C_{06}	C_{10}	C_{10}	C_{06}	D_{04}	D_{01}	C_{44}	C_{48}	C_{48}	C_{44}	D_{03}	D_{02}
C_{45}	C_{33}	C_{37}	D_{03}	D_{01}	C_{07}	C_{01}	C_{01}	C_{07}	D_{04}	D_{01}	C_{45}	C_{41}	C_{41}	C_{45}	D_{03}	D_{02}
C_{46}	C_{34}	C_{38}	D_{03}	D_{01}	C_{08}	C_{04}	C_{04}	C_{08}	D_{04}	D_{01}	C_{46}	C_{42}	C_{42}	C_{46}	D_{03}	D_{02}
C_{47}	C_{35}	C_{39}	D_{03}	D_{01}	C_{09}	C_{05}	C_{05}	C_{09}	D_{04}	D_{01}	C_{47}	C_{43}	C_{43}	C_{47}	D_{03}	D_{02}
C_{48}	C_{36}	C_{40}	D_{03}	D_{01}	C_{10}	C_{06}	C_{06}	C_{10}	D_{04}	D_{01}	C_{48}	C_{44}	C_{44}	C_{48}	D_{03}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
C_{25}	D_{02}	D_{04}	C_{02}	C_{14}	C_{02}	C_{14}	D_{03}	D_{04}	C_{03}	C_{21}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
C_{26}	D_{02}	D_{04}	C_{11}	C_{15}	C_{11}	C_{15}	D_{03}	D_{04}	C_{18}	C_{22}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
C_{27}	D_{02}	D_{04}	C_{12}	C_{16}	C_{12}	C_{16}	D_{03}	D_{04}	C_{19}	C_{23}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
C_{28}	D_{02}	D_{04}	C_{13}	C_{17}	C_{13}	C_{17}	D_{03}	D_{04}	C_{20}	C_{24}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
C_{29}	D_{02}	D_{04}	C_{14}	C_{02}	C_{14}	C_{02}	D_{03}	D_{04}	C_{21}	C_{03}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{30}	D_{02}	D_{04}	C_{15}	C_{11}	C_{15}	C_{11}	D_{03}	D_{04}	C_{22}	C_{18}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
C_{31}	D_{02}	D_{04}	C_{16}	C_{12}	C_{16}	C_{12}	D_{03}	D_{04}	C_{23}	C_{19}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
C_{32}	D_{02}	D_{04}	C_{17}	C_{13}	C_{17}	C_{13}	D_{03}	D_{04}	C_{24}	C_{20}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
C_{33}	C_{02}	C_{14}	D_{02}	D_{04}	C_{02}	C_{14}	C_{03}	C_{21}	D_{03}	D_{04}	C_{03}	C_{21}	D_{01}	D_{02}	D_{03}	D_{04}
C_{34}	C_{11}	C_{15}	D_{02}	D_{04}	C_{11}	C_{15}	C_{18}	C_{22}	D_{03}	D_{04}	C_{18}	C_{22}	D_{01}	D_{02}	D_{03}	D_{04}
C_{35}	C_{12}	C_{16}	D_{02}	D_{04}	C_{12}	C_{16}	C_{19}	C_{23}	D_{03}	D_{04}	C_{19}	C_{23}	D_{01}	D_{02}	D_{03}	D_{04}
C_{36}	C_{13}	C_{17}	D_{02}	D_{04}	C_{13}	C_{17}	C_{20}	C_{24}	D_{03}	D_{04}	C_{20}	C_{24}	D_{01}	D_{02}	D_{03}	D_{04}
C_{37}	C_{14}	C_{02}	D_{02}	D_{04}	C_{14}	C_{02}	C_{21}	C_{03}	D_{03}	D_{04}	C_{21}	C_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{38}	C_{15}	C_{11}	D	D_{04}	C_{15}	C_{11}	C_{22}	C_{18}	D_{03}	D_{04}	C_{22}	C_{18}	D_{01}	D_{02}	D_{03}	D_{04}
C_{39}	C_{16}	C_{12}	D_{02}	D_{04}	C_{16}	C_{12}	C_{23}	C_{19}	D_{03}	D_{04}	C_{23}	C_{19}	D_{01}	D_{02}	D_{03}	D_{04}
C_{40}	C_{17}	C_{13}	D_{02}	D_{04}	C_{17}	C_{13}	C_{24}	C_{20}	D_{03}	D_{04}	C_{24}	C_{20}	D_{01}	D_{02}	D_{03}	D_{04}
C_{41}	C_{02}	C_{14}	C_{14}	C_{02}	D_{04}	D_{02}	C_{03}	C_{21}	C_{21}	C_{03}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{42}	C_{11}	C_{15}	C_{15}	C_{11}	D_{04}	D_{02}	C_{18}	C_{22}	C_{22}	C_{18}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{43}	C_{12}	C_{16}	C_{16}	C_{12}	D_{04}	D_{02}	C_{19}	C_{23}	C_{23}	C_{19}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{44}	C_{13}	C_{17}	C_{17}	C_{13}	D_{04}	D_{02}	C_{20}	C_{24}	C_{24}	C_{20}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{45}	C_{14}	C_{02}	C_{02}	C_{14}	D_{04}	D_{02}	C_{21}	C_{03}	C_{03}	C_{21}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{46}	C_{15}	C_{11}	C_{11}	C_{15}	D_{04}	D_{02}	C_{22}	C_{18}	C_{18}	C_{22}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{47}	C_{16}	C_{12}	C_{12}	C_{16}	D_{04}	D_{02}	C_{23}	C_{19}	C_{19}	C_{23}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
C_{48}	C_{17}	C_{13}	C_{13}	C_{17}	D_{04}	D_{02}	C_{24}	C_{20}	C_{20}	C_{24}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
c_{49}	c_{49}	c_{55}	c_{50}	c_{67}	c_{56}	c_{68}	c_{49}	c_{61}	c_{55}	c_{61}	c_{50}	c_{73}	c_{67}	c_{73}	c_{56}	c_{79}
c_{50}	c_{50}	c_{56}	c_{49}	c_{68}	c_{55}	c_{67}	c_{50}	c_{62}	c_{56}	c_{62}	c_{49}	c_{74}	c_{68}	c_{74}	c_{55}	c_{80}
c_{51}	c_{51}	c_{57}	c_{52}	c_{69}	c_{58}	c_{70}	c_{51}	c_{63}	c_{57}	c_{63}	c_{52}	c_{75}	c_{69}	c_{75}	c_{58}	c_{81}
c_{52}	c_{52}	c_{58}	c_{51}	c_{70}	c_{57}	c_{69}	c_{52}	c_{64}	c_{58}	c_{64}	c_{51}	c_{76}	c_{70}	c_{76}	c_{57}	c_{82}
c_{53}	c_{53}	c_{59}	c_{54}	c_{71}	c_{60}	c_{72}	c_{53}	c_{65}	c_{59}	c_{65}	c_{54}	c_{77}	c_{71}	c_{77}	c_{60}	c_{83}
c_{54}	c_{54}	c_{60}	c_{53}	c_{72}	c_{59}	c_{71}	c_{54}	c_{66}	c_{60}	c_{66}	c_{53}	c_{78}	c_{72}	c_{78}	c_{59}	c_{84}
c_{55}	c_{55}	c_{49}	c_{67}	c_{50}	c_{68}	c_{56}	c_{61}	c_{49}	c_{61}	c_{55}	c_{73}	c_{50}	c_{73}	c_{67}	c_{79}	c_{56}
c_{56}	c_{56}	c_{50}	c_{68}	c_{49}	c_{67}	c_{55}	c_{62}	c_{50}	c_{62}	c_{56}	c_{74}	c_{49}	c_{74}	c_{68}	c_{80}	c_{55}
c_{57}	c_{57}	c_{51}	c_{69}	c_{52}	c_{70}	c_{58}	c_{63}	c_{51}	c_{63}	c_{57}	c_{75}	c_{52}	c_{75}	c_{69}	c_{81}	c_{58}
c_{58}	c_{58}	c_{52}	c_{70}	c_{51}	c_{69}	c_{57}	c_{64}	c_{52}	c_{64}	c_{58}	c_{76}	c_{51}	c_{76}	c_{70}	c_{82}	c_{57}
c_{59}	c_{59}	c_{53}	c_{71}	c_{54}	c_{72}	c_{60}	c_{65}	c_{53}	c_{65}	c_{59}	c_{77}	c_{54}	c_{77}	c_{71}	c_{83}	c_{60}
c_{60}	c_{60}	c_{54}	c_{72}	c_{53}	c_{71}	c_{59}	c_{66}	c_{54}	c_{66}	c_{60}	c_{78}	c_{53}	c_{78}	c_{72}	c_{84}	c_{59}
c_{61}	c_{6}	c_{61}	c_{73}	c_{73}	c_{79}	c_{79}	c_{55}	c_{55}	c_{49}	c_{49}	c_{67}	c_{67}	c_{50}	c_{50}	c_{68}	c_{68}
c_{62}	c_{62}	c_{62}	c_{74}	c_{74}	c_{80}	c_{80}	c_{56}	c_{56}	c_{50}	c_{50}	c_{68}	c_{68}	c_{49}	c_{49}	c_{67}	c_{67}
c_{63}	c_{63}	c_{63}	c_{75}	c_{75}	c_{81}	c_{81}	c_{57}	c_{57}	c_{51}	c_{51}	c_{69}	c_{69}	c_{52}	c_{52}	c_{70}	c_{70}
c_{64}	c_{64}	c_{64}	c_{76}	c_{76}	c_{82}	c_{82}	c_{58}	c_{58}	c_{52}	c_{52}	c_{70}	c_{70}	c_{51}	c_{51}	c_{69}	c_{69}
c_{65}	c_{65}	c_{65}	c_{77}	c_{77}	c_{83}	c_{83}	c_{59}	c_{59}	c_{53}	c_{53}	c_{71}	c_{71}	c_{54}	c_{54}	c_{72}	c_{72}
c_{66}	c_{66}	c_{66}	c_{78}	c_{78}	c_{84}	c_{84}	c_{60}	c_{60}	c_{54}	c_{54}	c_{72}	c_{72}	c_{53}	c_{53}	c_{71}	c_{71}
c_{67}	c_{67}	c_{68}	c_{55}	c_{56}	c_{49}	c_{50}	c_{73}	c_{74}	c_{79}	c_{80}	c_{61}	c_{62}	c_{79}	c_{80}	c_{61}	c_{62}
c_{68}	c_{68}	c_{67}	c_{56}	c_{55}	c_{50}	c_{49}	c_{74}	c_{73}	c_{80}	c_{79}	c_{62}	c_{61}	c_{80}	c_{79}	c_{62}	c_{61}
c_{69}	c_{69}	c_{70}	c_{57}	c_{58}	c_{51}	c_{52}	c_{75}	c_{76}	c_{81}	c_{82}	c_{63}	c_{64}	c_{81}	c_{82}	c_{63}	c_{64}
c_{70}	c_{70}	c_{69}	c_{58}	c_{57}	c_{52}	c_{51}	c_{76}	c_{75}	c_{82}	c_{81}	c_{64}	c_{63}	c_{82}	c_{81}	c_{64}	c_{63}
c_{71}	c_{71}	c_{72}	c_{59}	c_{60}	c_{53}	c_{54}	c_{77}	c_{78}	c_{83}	c_{84}	c_{65}	c_{66}	c_{83}	c_{84}	c_{65}	c_{66}
c_{72}	c_{72}	c_{71}	c_{60}	c_{59}	c_{54}	c_{53}	c_{78}	c_{77}	c_{84}	c_{83}	c_{66}	c_{65}	c_{84}	c_{83}	c_{66}	c_{65}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
C_{49}	C_{68}	C_{79}	C_{62}	C_{62}	C_{74}	C_{80}	C_{74}	C_{80}	C_{49}	C_{49}	D_{01}	D_{02}	C_{50}	C_{50}	C_{55}	D_{01}
C_{50}	C_{67}	C_{80}	C_{61}	C_{61}	C_{73}	C_{79}	C_{73}	C_{79}	C_{50}	C_{50}	D_{01}	D_{02}	C_{49}	C_{49}	C_{56}	D_{01}
C_{51}	C_{70}	C_{81}	C_{64}	C_{64}	C_{76}	C_{82}	C_{76}	C_{82}	C_{51}	C_{51}	D_{01}	D_{02}	C_{52}	C_{52}	C_{57}	D_{01}
C_{52}	C_{69}	C_{82}	C_{63}	C_{63}	C_{75}	C_{81}	C_{75}	C_{81}	C_{52}	C_{52}	D_{01}	D_{02}	C_{51}	C_{51}	C_{58}	D_{01}
C_{53}	C_{72}	C_{83}	C_{66}	C_{66}	C_{78}	C_{84}	C_{78}	C_{84}	C_{53}	C_{53}	D_{01}	D_{02}	C_{54}	C_{54}	C_{59}	D_{01}
C_{54}	C_{71}	C_{84}	C_{65}	C_{65}	C_{77}	C_{83}	C_{77}	C_{83}	C_{54}	C_{54}	D_{01}	D_{02}	C_{53}	C_{53}	C_{60}	D_{01}
C_{55}	C_{79}	C_{68}	C_{74}	C_{80}	C_{62}	C_{62}	C_{80}	C_{74}	C_{49}	D_{01}	C_{49}	C_{50}	C_{50}	D_{01}	C_{55}	C_{55}
C_{56}	C_{80}	C_{67}	C_{73}	C_{79}	C_{61}	C_{61}	C_{79}	C_{73}	C_{50}	D_{01}	C_{50}	C_{49}	C_{49}	D_{01}	C_{56}	C_{56}
C_{57}	C_{81}	C_{70}	C_{76}	C_{82}	C_{64}	C_{64}	C_{82}	C_{76}	C_{51}	D_{01}	C_{51}	C_{52}	C_{52}	D_{01}	C_{57}	C_{57}
C_{58}	C_{82}	C_{69}	C_{75}	C_{81}	C_{63}	C_{63}	C_{81}	C_{75}	C_{52}	D_{01}	C_{52}	C_{51}	C_{51}	D_{01}	C_{58}	C_{58}
C_{59}	C_{83}	C_{72}	C_{78}	C_{84}	C_{66}	C_{66}	C_{84}	C_{78}	C_{53}	D_{01}	C_{53}	C_{54}	C_{54}	D_{01}	C_{59}	C_{59}
C_{60}	C_{84}	C_{71}	C_{77}	C_{83}	C_{65}	C_{65}	C_{83}	C_{77}	C_{54}	D_{01}	C_{54}	C_{53}	C_{53}	D_{01}	C_{60}	C_{60}
C_{61}	C_{56}	C_{56}	C_{80}	C_{74}	C_{80}	C_{74}	C_{62}	C_{62}	C_{61}	C_{61}	C_{61}	C_{73}	C_{73}	C_{73}	C_{61}	C_{61}
C_{62}	C_{55}	C_{55}	C_{79}	C_{73}	C_{79}	C_{73}	C_{61}	C_{61}	C_{62}	C_{62}	C_{62}	C_{74}	C_{74}	C_{74}	C_{62}	C_{62}
C_{63}	C_{58}	C_{58}	C_{82}	C_{76}	C_{82}	C_{76}	C_{64}	C_{64}	C_{63}	C_{63}	C_{63}	C_{75}	C_{75}	C_{75}	C_{63}	C_{63}
C_{64}	C_{57}	C_{57}	C_{81}	C_{75}	C_{81}	C_{75}	C_{63}	C_{63}	C_{64}	C_{64}	C_{64}	C_{76}	C_{76}	C_{76}	C_{64}	C_{64}
C_{65}	C_{60}	C_{60}	C_{84}	C_{78}	C_{84}	C_{78}	C_{66}	C_{66}	C_{65}	C_{65}	C_{65}	C_{77}	C_{77}	C_{77}	C_{65}	C_{65}
C_{66}	C_{59}	C_{59}	C_{83}	C_{77}	C_{83}	C_{77}	C_{65}	C_{65}	C_{66}	C_{66}	C_{66}	C_{78}	C_{78}	C_{78}	C_{66}	C_{66}
C_{67}	C_{73}	C_{74}	C_{49}	C_{55}	C_{50}	C_{56}	C_{67}	C_{68}	D_{02}	C_{50}	C_{49}	C_{50}	D_{01}	C_{49}	D_{03}	C_{55}
C_{68}	C_{74}	C_{73}	C_{50}	C_{56}	C_{49}	C_{55}	C_{68}	C_{67}	D_{02}	C_{49}	C_{50}	C_{49}	D_{01}	C_{50}	D_{03}	C_{56}
C_{69}	C_{75}	C_{76}	C_{51}	C_{57}	C_{52}	C_{58}	C_{69}	C_{70}	D_{02}	C_{52}	C_{51}	C_{52}	D_{01}	C_{51}	D_{03}	C_{57}
C_{70}	C_{76}	C_{75}	C_{52}	C_{58}	C_{51}	C_{57}	C_{70}	C_{69}	D_{02}	C_{51}	C_{52}	C_{51}	D_{01}	C_{52}	D_{03}	C_{58}
C_{71}	C_{77}	C_{78}	C_{53}	C_{59}	C_{54}	C_{60}	C_{71}	C_{72}	D_{02}	C_{54}	C_{53}	C_{54}	D_{01}	C_{53}	D_{03}	C_{59}
C_{72}	C_{78}	C_{77}	C_{54}	C_{60}	C_{53}	C_{59}	C_{72}	C_{71}	D_{02}	C_{53}	C_{54}	C_{53}	D_{01}	C_{54}	D_{03}	C_{60}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
C_{49}	C55	C56	C56	D03	C68	D02	C68	C67	C67	D03	D01	D02	D04	D04	C61	C73
C_{50}	C56	C55	C55	D03	C67	D02	C67	C68	C68	D03	D01	D02	D04	D04	C62	C74
C_{51}	C57	C58	C58	D03	C70	D02	C70	C69	C69	D03	D01	D02	D04	D04	C63	C75
C_{52}	C58	C57	C57	D03	C69	D02	C69	C70	C70	D03	D01	D02	D04	D04	C64	C76
C_{53}	C59	C60	C60	D03	C72	D02	C72	C71	C71	D03	D01	D02	D04	D04	C65	C77
C_{54}	C60	C59	C59	D03	C71	D02	C71	C72	C72	D03	D01	D02	D04	D04	C66	C78
C_{55}	D01	D03	C56	C56	D03	C67	C68	D02	C67	C68	C61	C73	C62	C74	D01	D02
C_{56}	D01	D03	C55	C55	D03	C68	C67	D02	C68	C67	C62	C74	C61	C73	D01	D02
C_{57}	D01	D03	C58	C58	D03	C69	C70	D02	C69	C70	C63	C75	C64	C76	D01	D02
C_{58}	D01	D03	C57	C57	D03	C70	C69	D02	C70	C69	C64	C76	C63	C75	D01	D02
C_{59}	D01	D03	C60	C60	D03	C71	C72	D02	C71	C72	C65	C77	C66	C78	D01	D02
C_{60}	D01	D03	C59	C59	D03	C72	C71	D02	C72	C71	C66	C78	C65	C77	D01	D02
C_{61}	C61	C79	C79	C79	C79	C73	C79	C73	C73	C79	C49	C50	C74	C62	C49	C50
C_{62}	C62	C80	C80	C80	C80	C74	C80	C74	C74	C80	C50	C49	C73	C61	C50	C49
C_{63}	C63	C81	C81	C81	C81	C75	C81	C75	C75	C81	C51	C52	C76	C64	C51	C52
C_{64}	C64	C82	C82	C82	C82	C76	C82	C76	C76	C82	C52	C51	C75	C63	C52	C51
C_{65}	C65	C83	C83	C83	C83	C77	C83	C77	C77	C83	C53	C54	C78	C66	C53	C54
C_{66}	C66	C84	C84	C84	C84	C78	C84	C78	C78	C84	C54	C53	C77	C65	C54	C53
C_{67}	C56	C55	D01	C56	C67	C67	D02	C68	D03	C68	C61	C73	C62	C74	C62	C74
C_{68}	C55	C56	D01	C55	C68	C68	D02	C67	D03	C67	C62	C74	C61	C73	C61	C73
C_{69}	C58	C57	D01	C58	C69	C69	D02	C70	D03	C70	C63	C75	C64	C76	C64	C76
C_{70}	C57	C58	D01	C57	C70	C70	D02	C69	D03	C69	C64	C76	C63	C75	C63	C75
C_{71}	C60	C59	D01	C60	C71	C71	D02	C72	D03	C72	C65	C77	C66	C78	C66	C78
C_{72}	C59	C60	D01	C59	C72	C72	D02	C71	D03	C71	C66	C78	C65	C77	C65	C77

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
C_{49}	C_{62}	C_{74}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	C_{62}	C_{74}	C_{61}	C_{73}	C_{50}	C_{62}	C_{49}	C_{74}
C_{50}	C_{61}	C_{73}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	C_{61}	C_{73}	C_{62}	C_{74}	C_{49}	C_{61}	C_{50}	C_{73}
C_{51}	C_{64}	C_{76}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	C_{64}	C_{76}	C_{63}	C_{75}	C_{52}	C_{64}	C_{51}	C_{76}
C_{52}	C_{63}	C_{75}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	C_{63}	C_{75}	C_{64}	C_{76}	C_{51}	C_{63}	C_{52}	C_{75}
C_{53}	C_{66}	C_{78}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	C_{66}	C_{78}	C_{65}	C_{77}	C_{54}	C_{66}	C_{53}	C_{78}
C_{54}	C_{65}	C_{77}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	C_{65}	C_{77}	C_{66}	C_{78}	C_{53}	C_{65}	C_{54}	C_{77}
C_{55}	D_{04}	D_{04}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	C_{62}	C_{74}	C_{61}	C_{73}	C_{73}	C_{74}	C_{61}	C_{62}
C_{56}	D_{04}	D_{04}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	C_{61}	C_{73}	C_{62}	C_{74}	C_{74}	C_{73}	C_{62}	C_{61}
C_{57}	D_{04}	D_{04}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	C_{64}	C_{76}	C_{63}	C_{75}	C_{75}	C_{76}	C_{63}	C_{64}
C_{58}	D_{04}	D_{04}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	C_{63}	C_{75}	C_{64}	C_{76}	C_{76}	C_{75}	C_{64}	C_{63}
C_{59}	D_{04}	D_{04}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	C_{66}	C_{78}	C_{65}	C_{77}	C_{77}	C_{78}	C_{65}	C_{66}
C_{60}	D_{04}	D_{04}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	C_{65}	C_{77}	C_{66}	C_{78}	C_{78}	C_{77}	C_{66}	C_{65}
C_{61}	C_{74}	C_{62}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{74}	C_{62}	C_{49}	C_{50}	C_{50}	C_{62}	C_{49}	C_{74}
C_{62}	C_{73}	C_{61}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{73}	C_{61}	C_{50}	C_{49}	C_{49}	C_{61}	C_{50}	C_{73}
C_{63}	C_{76}	C_{64}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{76}	C_{64}	C_{51}	C_{52}	C_{52}	C_{64}	C_{51}	C_{76}
C_{64}	C_{75}	C_{63}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{75}	C_{63}	C_{52}	C_{51}	C_{51}	C_{63}	C_{52}	C_{75}
C_{65}	C_{78}	C_{66}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{78}	C_{66}	C_{53}	C_{54}	C_{54}	C_{66}	C_{53}	C_{78}
C_{66}	C_{77}	C_{65}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{77}	C_{65}	C_{54}	C_{53}	C_{53}	C_{65}	C_{54}	C_{77}
C_{67}	C_{61}	C_{73}	C_{73}	C_{74}	C_{61}	C_{62}	C_{49}	C_{50}	D_{01}	D_{02}	D_{04}	D_{04}	C_{61}	C_{49}	C_{73}	C_{50}
C_{68}	C_{62}	C_{74}	C_{74}	C_{73}	C_{62}	C_{61}	C_{50}	C_{49}	D_{01}	D_{02}	D_{04}	D_{04}	C_{62}	C_{50}	C_{74}	C_{49}
C_{69}	C_{63}	C_{75}	C_{75}	C_{76}	C_{63}	C_{64}	C_{51}	C_{52}	D_{01}	D_{02}	D_{04}	D_{04}	C_{63}	C_{51}	C_{75}	C_{52}
C_{70}	C_{64}	C_{76}	C_{76}	C_{75}	C_{64}	C_{65}	C_{52}	C_{51}	D_{01}	D_{02}	D_{04}	D_{04}	C_{64}	C_{52}	C_{76}	C_{51}
C_{71}	C_{65}	C_{77}	C_{77}	C_{78}	C_{65}	C_{66}	C_{53}	C_{54}	D_{01}	D_{02}	D_{04}	D_{04}	C_{65}	C_{53}	C_{77}	C_{54}
C_{72}	C_{66}	C_{78}	C_{78}	C_{77}	C_{66}	C_{65}	C_{54}	C_{53}	D_{01}	D_{02}	D_{04}	D_{04}	C_{66}	C_{54}	C_{78}	C_{53}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
C_{49}	C_{61}	C_{73}	C_{73}	C_{74}	C_{61}	C_{62}	C_{49}	C_{50}	D_{04}	D_{04}	C_{62}	C_{80}	C_{61}	C_{79}	D_{01}	D_{03}
C_{50}	C_{62}	C_{74}	C_{74}	C_{73}	C_{62}	C_{61}	C_{50}	C_{49}	D_{04}	D_{04}	C_{61}	C_{79}	C_{62}	C_{80}	D_{01}	D_{03}
C_{51}	C_{63}	C_{75}	C_{75}	C_{76}	C_{63}	C_{64}	C_{51}	C_{52}	D_{04}	D_{04}	C_{64}	C_{82}	C_{63}	C_{81}	D_{01}	D_{03}
C_{52}	C_{64}	C_{76}	C_{76}	C_{75}	C_{64}	C_{63}	C_{52}	C_{51}	D_{04}	D_{04}	C_{63}	C_{81}	C_{64}	C_{82}	D_{01}	D_{03}
C_{53}	C_{65}	C_{77}	C_{77}	C_{78}	C_{65}	C_{66}	C_{53}	C_{54}	D_{04}	D_{04}	C_{66}	C_{84}	C_{65}	C_{83}	D_{01}	D_{03}
C_{54}	C_{66}	C_{78}	C_{78}	C_{77}	C_{66}	C_{65}	C_{54}	C_{55}	D_{04}	D_{04}	C_{65}	C_{83}	C_{66}	C_{84}	D_{01}	D_{03}
C_{55}	C_{49}	C_{50}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	C_{62}	C_{80}	D_{04}	D_{04}	D_{01}	D_{03}	C_{61}	C_{79}
C_{56}	C_{50}	C_{49}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	C_{61}	C_{79}	D_{04}	D_{04}	D_{01}	D_{03}	C_{62}	C_{80}
C_{57}	C_{51}	C_{52}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	C_{64}	C_{82}	D_{04}	D_{04}	D_{01}	D_{03}	C_{63}	C_{81}
C_{58}	C_{52}	C_{51}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	C_{63}	C_{81}	D_{04}	D_{04}	D_{01}	D_{03}	C_{64}	C_{82}
C_{59}	C_{53}	C_{54}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	C_{66}	C_{84}	D_{04}	D_{04}	D_{01}	D_{03}	C_{65}	C_{83}
C_{60}	C_{54}	C_{53}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	C_{65}	C_{83}	D_{04}	D_{04}	D_{01}	D_{03}	C_{66}	C_{84}
C_{61}	C_{61}	C_{73}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	C_{80}	C_{62}	C_{80}	C_{63}	C_{55}	C_{56}	C_{55}	C_{56}
C_{62}	C_{62}	C_{74}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	C_{79}	C_{61}	C_{79}	C_{61}	C_{56}	C_{55}	C_{56}	C_{55}
C_{63}	C_{63}	C_{75}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	C_{82}	C_{64}	C_{82}	C_{64}	C_{57}	C_{58}	C_{57}	C_{58}
C_{64}	C_{64}	C_{76}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	C_{81}	C_{63}	C_{81}	C_{63}	C_{58}	C_{57}	C_{58}	C_{57}
C_{65}	C_{65}	C_{77}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	C_{84}	C_{66}	C_{84}	C_{66}	C_{59}	C_{60}	C_{59}	C_{60}
C_{66}	C_{66}	C_{78}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	C_{83}	C_{65}	C_{83}	C_{65}	C_{60}	C_{59}	C_{60}	C_{59}
C_{67}	C_{74}	C_{62}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	C_{62}	C_{80}	C_{61}	C_{79}	C_{62}	C_{80}	C_{61}	C_{79}
C_{68}	C_{73}	C_{61}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	C_{61}	C_{79}	C_{62}	C_{80}	C_{61}	C_{79}	C_{62}	C_{80}
C_{69}	C_{76}	C_{64}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	C_{64}	C_{82}	C_{63}	C_{81}	C_{64}	C_{82}	C_{63}	C_{81}
C_{70}	C_{75}	C_{63}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	C_{63}	C_{81}	C_{64}	C_{82}	C_{63}	C_{81}	C_{64}	C_{82}
C_{71}	C_{78}	C_{66}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	C_{66}	C_{84}	C_{65}	C_{83}	C_{66}	C_{84}	C_{65}	C_{83}
C_{72}	C_{77}	C_{65}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	C_{65}	C_{83}	C_{66}	C_{84}	C_{65}	C_{83}	C_{66}	C_{84}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
C_{49}	c_{55}	c_{61}	c_{56}	c_{79}	c_{62}	c_{80}	c_{62}	c_{80}	c_{61}	c_{79}	c_{56}	c_{62}	c_{55}	c_{80}	c_{61}	c_{79}
C_{50}	c_{56}	c_{62}	c_{55}	c_{80}	c_{61}	c_{79}	c_{61}	c_{79}	c_{62}	c_{80}	c_{55}	c_{61}	c_{56}	c_{79}	c_{62}	c_{80}
C_{51}	c_{57}	c_{63}	c_{58}	c_{81}	c_{64}	c_{82}	c_{64}	c_{82}	c_{63}	c_{81}	c_{58}	c_{64}	c_{57}	c_{82}	c_{63}	c_{81}
C_{52}	c_{58}	c_{64}	c_{57}	c_{82}	c_{63}	c_{81}	c_{63}	c_{81}	c_{64}	c_{82}	c_{57}	c_{63}	c_{58}	c_{81}	c_{64}	c_{82}
C_{53}	c_{59}	c_{65}	c_{60}	c_{83}	c_{66}	c_{84}	c_{66}	c_{84}	c_{65}	c_{83}	c_{60}	c_{66}	c_{59}	c_{84}	c_{65}	c_{83}
C_{54}	c_{60}	c_{66}	c_{59}	c_{84}	c_{65}	c_{83}	c_{65}	c_{83}	c_{66}	c_{84}	c_{59}	c_{65}	c_{60}	c_{83}	c_{66}	c_{84}
C_{55}	c_{61}	c_{55}	c_{79}	c_{56}	c_{80}	c_{62}	c_{62}	c_{80}	c_{61}	c_{79}	c_{79}	c_{80}	c_{61}	c_{62}	c_{55}	c_{56}
C_{56}	c_{62}	c_{56}	c_{80}	c_{55}	c_{79}	c_{61}	c_{61}	c_{79}	c_{62}	c_{80}	c_{80}	c_{79}	c_{62}	c_{61}	c_{56}	c_{55}
C_{57}	c_{63}	c_{57}	c_{81}	c_{58}	c_{82}	c_{64}	c_{64}	c_{82}	c_{63}	c_{81}	c_{81}	c_{82}	c_{63}	c_{64}	c_{57}	c_{58}
C_{58}	c_{64}	c_{58}	c_{82}	c_{57}	c_{81}	c_{63}	c_{63}	c_{81}	c_{64}	c_{82}	c_{82}	c_{81}	c_{64}	c_{63}	c_{58}	c_{57}
C_{59}	c_{65}	c_{59}	c_{83}	c_{60}	c_{84}	c_{66}	c_{66}	c_{84}	c_{65}	c_{83}	c_{83}	c_{84}	c_{65}	c_{66}	c_{59}	c_{60}
C_{60}	c_{66}	c_{60}	c_{84}	c_{59}	c_{83}	c_{65}	c_{65}	c_{83}	c_{66}	c_{84}	c_{84}	c_{83}	c_{66}	c_{65}	c_{60}	c_{59}
C_{61}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{80}	c_{62}	c_{55}	c_{56}	c_{56}	c_{62}	c_{55}	c_{80}	c_{61}	c_{79}
C_{62}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{79}	c_{61}	c_{56}	c_{55}	c_{55}	c_{61}	c_{56}	c_{79}	c_{62}	c_{80}
C_{63}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{82}	c_{64}	c_{57}	c_{58}	c_{58}	c_{64}	c_{57}	c_{82}	c_{63}	c_{81}
C_{64}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{81}	c_{63}	c_{58}	c_{57}	c_{57}	c_{63}	c_{58}	c_{81}	c_{64}	c_{82}
C_{65}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{84}	c_{66}	c_{59}	c_{60}	c_{60}	c_{66}	c_{59}	c_{84}	c_{65}	c_{83}
C_{66}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	c_{83}	c_{65}	c_{60}	c_{59}	c_{59}	c_{65}	c_{60}	c_{83}	c_{66}	c_{84}
C_{67}	c_{79}	c_{80}	c_{61}	c_{62}	c_{55}	c_{56}	D_{01}	D_{03}	D_{04}	D_{04}	c_{61}	c_{55}	c_{79}	c_{56}	c_{80}	c_{62}
C_{68}	c_{80}	c_{79}	c_{62}	c_{61}	c_{56}	c_{55}	D_{01}	D_{03}	D_{04}	D_{04}	c_{62}	c_{56}	c_{80}	c_{55}	c_{79}	c_{61}
C_{69}	c_{81}	c_{82}	c_{63}	c_{64}	c_{57}	c_{58}	D_{01}	D_{03}	D_{04}	D_{04}	c_{63}	c_{57}	c_{81}	c_{58}	c_{82}	c_{64}
C_{70}	c_{82}	c_{81}	c_{64}	c_{63}	c_{58}	c_{57}	D_{01}	D_{03}	D_{04}	D_{04}	c_{64}	c_{58}	c_{82}	c_{57}	c_{81}	c_{63}
C_{71}	c_{83}	c_{84}	c_{65}	c_{66}	c_{59}	c_{60}	D_{01}	D_{03}	D_{04}	D_{04}	c_{65}	c_{59}	c_{83}	c_{60}	c_{84}	c_{66}
C_{72}	c_{84}	c_{83}	c_{66}	c_{65}	c_{60}	c_{59}	D_{01}	D_{03}	D_{04}	D_{04}	c_{66}	c_{60}	c_{84}	c_{59}	c_{83}	c_{65}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
C_{49}	C_{79}	C_{80}	C_{61}	C_{62}	C_{56}	C_{56}	D_{02}	D_{03}	D_{04}	D_{04}	C_{73}	C_{79}	C_{74}	C_{8}	C_{67}	C_{73}
C_{50}	C_{80}	C_{79}	C_{62}	C_{61}	C_{55}	C_{55}	D_{02}	D_{03}	D_{04}	D_{04}	C_{74}	C_{80}	C_{73}	C_{79}	C_{68}	C_{74}
C_{51}	C_{81}	C_{82}	C_{63}	C_{64}	C_{58}	C_{58}	D_{02}	D_{03}	D_{04}	D_{04}	C_{75}	C_{81}	C_{76}	C_{82}	C_{69}	C_{75}
C_{52}	C_{82}	C_{81}	C_{64}	C_{63}	C_{57}	C_{57}	D_{02}	D_{03}	D_{04}	D_{04}	C_{76}	C_{82}	C_{75}	C_{81}	C_{70}	C_{76}
C_{53}	C_{83}	C_{84}	C_{65}	C_{66}	C_{60}	C_{60}	D_{02}	D_{03}	D_{04}	D_{04}	C_{77}	C_{83}	C_{78}	C_{84}	C_{71}	C_{77}
C_{54}	C_{84}	C_{83}	C_{66}	C_{65}	C_{59}	C_{59}	D_{02}	D_{03}	D_{04}	D_{04}	C_{78}	C_{84}	C_{77}	C_{83}	C_{72}	C_{78}
C_{55}	C_{56}	C_{62}	C_{56}	C_{80}	C_{61}	C_{79}	C_{73}	C_{79}	C_{74}	C_{80}	D_{02}	D_{03}	D_{04}	D_{04}	C_{73}	C_{67}
C_{56}	C_{55}	C_{61}	C_{55}	C_{79}	C_{62}	C_{80}	C_{74}	C_{80}	C_{73}	C_{79}	D_{02}	D_{03}	D_{04}	D_{04}	C_{74}	C_{68}
C_{57}	C_{58}	C_{64}	C_{58}	C_{82}	C_{63}	C_{81}	C_{75}	C_{81}	C_{76}	C_{82}	D_{02}	D_{03}	D_{04}	D_{04}	C_{75}	C_{69}
C_{58}	C_{57}	C_{63}	C_{57}	C_{81}	C_{64}	C_{82}	C_{76}	C_{82}	C_{75}	C_{81}	D_{02}	D_{03}	D_{04}	D_{04}	C_{76}	C_{70}
C_{59}	C_{60}	C_{66}	C_{60}	C_{84}	C_{65}	C_{83}	C_{77}	C_{83}	C_{78}	C_{84}	D_{02}	D_{03}	D_{04}	D_{04}	C_{77}	C_{71}
C_{60}	C_{59}	C_{65}	C_{59}	C_{83}	C_{66}	C_{84}	C_{78}	C_{84}	C_{77}	C_{83}	D_{02}	D_{03}	D_{04}	D_{04}	C_{78}	C_{72}
C_{61}	C_{56}	C_{62}	C_{56}	C_{80}	C_{61}	C_{79}	C_{67}	C_{68}	C_{80}	C_{74}	C_{67}	C_{68}	C_{80}	C_{74}	D_{02}	D_{02}
C_{62}	C_{55}	C_{61}	C_{55}	C_{79}	C_{62}	C_{80}	C_{68}	C_{67}	C_{79}	C_{73}	C_{68}	C_{67}	C_{79}	C_{73}	D_{02}	D_{02}
C_{63}	C_{58}	C_{64}	C_{58}	C_{82}	C_{63}	C_{81}	C_{69}	C_{70}	C_{82}	C_{76}	C_{69}	C_{70}	C_{82}	C_{76}	D_{02}	D_{02}
C_{64}	C_{57}	C_{63}	C_{57}	C_{81}	C_{64}	C_{82}	C_{70}	C_{69}	C_{81}	C_{75}	C_{70}	C_{69}	C_{81}	C_{75}	D_{02}	D_{02}
C_{65}	C_{60}	C_{66}	C_{60}	C_{84}	C_{65}	C_{83}	C_{71}	C_{72}	C_{84}	C_{78}	C_{71}	C_{72}	C_{84}	C_{78}	D_{02}	D_{02}
C_{66}	C_{59}	C_{65}	C_{59}	C_{83}	C_{66}	C_{84}	C_{72}	C_{71}	C_{83}	C_{77}	C_{72}	C_{71}	C_{83}	C_{77}	D_{02}	D_{02}
C_{67}	C_{62}	C_{66}	C_{80}	C_{56}	C_{79}	C_{61}	C_{73}	C_{79}	C_{74}	C_{80}	C_{74}	C_{80}	C_{73}	C_{79}	C_{79}	C_{30}
C_{68}	C_{61}	C_{55}	C_{79}	C_{55}	C_{80}	C_{62}	C_{74}	C_{80}	C_{73}	C_{79}	C_{73}	C_{79}	C_{74}	C_{80}	C_{80}	C_{79}
C_{69}	C_{64}	C_{58}	C_{82}	C_{58}	C_{81}	C_{63}	C_{75}	C_{81}	C_{76}	C_{82}	C_{76}	C_{82}	C_{75}	C_{81}	C_{81}	C_{82}
C_{70}	C_{63}	C_{57}	C_{81}	C_{57}	C_{82}	C_{64}	C_{76}	C_{82}	C_{75}	C_{81}	C_{75}	C_{81}	C_{76}	C_{82}	C_{82}	C_{81}
C_{71}	C_{66}	C_{60}	C_{84}	C_{60}	C_{83}	C_{65}	C_{77}	C_{83}	C_{78}	C_{84}	C_{78}	C_{84}	C_{77}	C_{83}	C_{83}	C_{84}
C_{72}	C_{65}	C_{59}	C_{83}	C_{59}	C_{84}	C_{66}	C_{78}	C_{84}	C_{77}	C_{83}	C_{77}	C_{83}	C_{78}	C_{84}	C_{84}	C_{33}

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
C_{49}	C_{68}	C_{79}	C_{74}	C_{80}	C_{74}	C_{80}	C_{73}	C_{79}	C_{68}	C_{74}	C_{67}	C_{80}	C_{73}	C_{79}	C_{79}	C_{80}
C_{50}	C_{67}	C_{80}	C_{73}	C_{79}	C_{73}	C_{79}	C_{74}	C_{80}	C_{67}	C_{73}	C_{68}	C_{79}	C_{74}	C_{80}	C_{80}	C_{79}
C_{51}	C_{70}	C_{81}	C_{76}	C_{82}	C_{76}	C_{82}	C_{75}	C_{81}	C_{70}	C_{76}	C_{69}	C_{82}	C_{75}	C_{81}	C_{81}	C_{82}
C_{52}	C_{69}	C_{82}	C_{75}	C_{81}	C_{75}	C_{81}	C_{76}	C_{82}	C_{69}	C_{75}	C_{70}	C_{81}	C_{76}	C_{82}	C_{82}	C_{81}
C_{53}	C_{72}	C_{83}	C_{78}	C_{84}	C_{78}	C_{84}	C_{77}	C_{83}	C_{72}	C_{78}	C_{71}	C_{84}	C_{77}	C_{83}	C_{83}	C_{84}
C_{54}	C_{71}	C_{84}	C_{77}	C_{83}	C_{77}	C_{83}	C_{78}	C_{84}	C_{71}	C_{77}	C_{72}	C_{83}	C_{78}	C_{84}	C_{84}	C_{83}
C_{55}	C_{79}	C_{68}	C_{80}	C_{74}	C_{74}	C_{80}	C_{73}	C_{79}	C_{79}	C_{80}	C_{73}	C_{74}	C_{67}	C_{68}	C_{68}	C_{74}
C_{56}	C_{80}	C_{67}	C_{79}	C_{73}	C_{73}	C_{79}	C_{74}	C_{80}	C_{80}	C_{79}	C_{74}	C_{73}	C_{68}	C_{67}	C_{67}	C_{73}
C_{57}	C_{81}	C_{70}	C_{82}	C_{76}	C_{76}	C_{82}	C_{75}	C_{81}	C_{81}	C_{82}	C_{75}	C_{76}	C_{69}	C_{70}	C_{70}	C_{76}
C_{58}	C_{82}	C_{69}	C_{81}	C_{75}	C_{75}	C_{81}	C_{76}	C_{82}	C_{82}	C_{81}	C_{76}	C_{75}	C_{70}	C_{69}	C_{69}	C_{75}
C_{59}	C_{83}	C_{72}	C_{84}	C_{78}	C_{78}	C_{84}	C_{77}	C_{83}	C_{83}	C_{84}	C_{77}	C_{78}	C_{71}	C_{72}	C_{72}	C_{78}
C_{60}	C_{84}	C_{71}	C_{83}	C_{77}	C_{77}	C_{83}	C_{78}	C_{84}	C_{84}	C_{83}	C_{78}	C_{77}	C_{72}	C_{71}	C_{71}	C_{77}
C_{61}	D_{03}	D_{03}	D_{04}	D_{04}	C_{80}	C_{74}	C_{67}	C_{68}	C_{68}	C_{74}	C_{67}	C_{80}	C_{73}	C_{79}	C_{68}	C_{74}
C_{62}	D_{03}	D_{03}	D_{04}	D_{04}	C_{79}	C_{73}	C_{68}	C_{67}	C_{67}	C_{73}	C_{68}	C_{79}	C_{74}	C_{80}	C_{67}	C_{73}
C_{63}	D_{03}	D_{03}	D_{04}	D_{04}	C_{82}	C_{76}	C_{69}	C_{70}	C_{70}	C_{76}	C_{69}	C_{82}	C_{75}	C_{81}	C_{70}	C_{76}
C_{64}	D_{03}	D_{03}	D_{04}	D_{04}	C_{81}	C_{75}	C_{70}	C_{69}	C_{69}	C_{75}	C_{70}	C_{81}	C_{76}	C_{82}	C_{69}	C_{75}
C_{65}	D_{03}	D_{03}	D_{04}	D_{04}	C_{84}	C_{78}	C_{71}	C_{72}	C_{72}	C_{78}	C_{71}	C_{84}	C_{77}	C_{83}	C_{72}	C_{78}
C_{66}	D_{03}	D_{03}	D_{04}	D_{04}	C_{83}	C_{77}	C_{72}	C_{71}	C_{71}	C_{77}	C_{72}	C_{83}	C_{78}	C_{84}	C_{71}	C_{77}
C_{67}	C_{73}	C_{74}	C_{67}	C_{68}	D_{02}	D_{03}	D_{04}	D_{04}	C_{73}	C_{67}	C_{79}	C_{68}	C_{80}	C_{74}	C_{74}	C_{68}
C_{68}	C_{74}	C_{73}	C_{68}	C_{67}	D_{02}	D_{03}	D_{04}	D_{04}	C_{74}	C_{68}	C_{80}	C_{67}	C_{79}	C_{73}	C_{73}	C_{67}
C_{69}	C_{75}	C_{76}	C_{69}	C_{70}	D_{02}	D_{03}	D_{04}	D_{04}	C_{75}	C_{69}	C_{81}	C_{70}	C_{82}	C_{76}	C_{76}	C_{70}
C_{70}	C_{76}	C_{75}	C_{70}	C_{69}	D_{02}	D_{03}	D_{04}	D_{04}	C_{76}	C_{70}	C_{82}	C_{69}	C_{81}	C_{75}	C_{75}	C_{69}
C_{71}	C_{77}	C_{78}	C_{71}	C_{72}	D_{02}	D_{03}	D_{04}	D_{04}	C_{77}	C_{71}	C_{83}	C_{72}	C_{84}	C_{78}	C_{78}	C_{72}
C_{72}	C_{78}	C_{77}	C_{72}	C_{71}	D_{02}	D_{03}	D_{04}	D_{04}	C_{78}	C_{72}	C_{84}	C_{71}	C_{83}	C_{77}	C_{77}	C_{71}

TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
C_{49}	C_{73}	C_{74}	C_{67}	C_{68}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}
C_{50}	C_{74}	C_{73}	C_{68}	C_{67}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}
C_{51}	C_{75}	C_{76}	C_{69}	C_{70}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}
C_{52}	C_{76}	C_{75}	C_{70}	C_{69}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}
C_{53}	C_{77}	C_{78}	C_{71}	C_{72}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}
C_{54}	C_{78}	C_{77}	C_{72}	C_{71}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}
C_{55}	C_{67}	C_{80}	C_{73}	C_{79}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{56}	C_{68}	C_{79}	C_{74}	C_{80}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{57}	C_{69}	C_{82}	C_{75}	C_{81}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{58}	C_{70}	C_{81}	C_{76}	C_{82}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{59}	C_{71}	C_{84}	C_{77}	C_{83}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{60}	C_{72}	C_{83}	C_{78}	C_{84}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
C_{61}	C_{67}	C_{80}	C_{73}	C_{79}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}
C_{62}	C_{68}	C_{79}	C_{74}	C_{80}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}
C_{63}	C_{69}	C_{82}	C_{75}	C_{81}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}
C_{64}	C_{70}	C_{81}	C_{76}	C_{82}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}
C_{65}	C_{71}	C_{84}	C_{77}	C_{83}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}
C_{66}	C_{72}	C_{83}	C_{78}	C_{84}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}
C_{67}	C_{80}	C_{67}	C_{79}	C_{73}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}
C_{68}	C_{79}	C_{68}	C_{80}	C_{74}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}
C_{69}	C_{82}	C_{69}	C_{81}	C_{75}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}
C_{70}	C_{81}	C_{70}	C_{82}	C_{76}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}
C_{71}	C_{84}	C_{71}	C_{83}	C_{77}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}
C_{72}	C_{83}	C_{72}	C_{84}	C_{78}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
C_{49}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{50}	C_{56}	C_{49}	C_{68}
C_{50}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{49}	C_{55}	C_{50}	C_{67}
C_{51}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{52}	C_{58}	C_{51}	C_{70}
C_{52}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{51}	C_{57}	C_{52}	C_{69}
C_{53}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{54}	C_{60}	C_{53}	C_{72}
C_{54}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{53}	C_{59}	C_{54}	C_{71}
C_{55}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{67}	C_{68}	C_{55}	C_{56}
C_{56}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{68}	C_{67}	C_{56}	C_{55}
C_{57}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{69}	C_{70}	C_{57}	C_{58}
C_{58}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{70}	C_{69}	C_{58}	C_{57}
C_{59}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{71}	C_{72}	C_{59}	C_{60}
C_{60}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{72}	C_{71}	C_{60}	C_{59}
C_{61}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{67}	C_{68}	C_{55}	C_{56}	C_{49}	C_{50}	C_{50}	C_{56}	C_{49}	C_{68}
C_{62}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{68}	C_{67}	C_{56}	C_{55}	C_{50}	C_{49}	C_{49}	C_{55}	C_{50}	C_{67}
C_{63}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{69}	C_{70}	C_{57}	C_{58}	C_{51}	C_{52}	C_{52}	C_{58}	C_{51}	C_{70}
C_{64}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{70}	C_{69}	C_{58}	C_{57}	C_{52}	C_{51}	C_{51}	C_{57}	C_{52}	C_{69}
C_{65}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{71}	C_{72}	C_{59}	C_{60}	C_{53}	C_{54}	C_{54}	C_{60}	C_{53}	C_{72}
C_{66}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{72}	C_{71}	C_{60}	C_{59}	C_{54}	C_{53}	C_{53}	C_{59}	C_{54}	C_{71}
C_{67}	C_{67}	C_{68}	C_{55}	C_{56}	C_{49}	C_{50}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{55}	C_{49}	C_{67}	C_{50}
C_{68}	C_{68}	C_{67}	C_{56}	C_{55}	C_{50}	C_{49}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{56}	C_{50}	C_{68}	C_{49}
C_{69}	C_{69}	C_{70}	C_{57}	C_{58}	C_{51}	C_{52}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{57}	C_{51}	C_{69}	C_{52}
C_{70}	C_{70}	C_{69}	C_{58}	C_{57}	C_{52}	C_{51}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{58}	C_{52}	C_{70}	C_{51}
C_{71}	C_{71}	C_{72}	C_{59}	C_{60}	C_{53}	C_{54}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{59}	C_{53}	C_{71}	C_{54}
C_{72}	C_{72}	C_{71}	C_{60}	C_{59}	C_{54}	C_{53}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{60}	C_{54}	C_{72}	C_{53}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
C_{49}	C_{55}	C_{67}	C_{67}	C_{68}	C_{55}	C_{56}	C_{49}	C_{50}	D_{01}	D_{02}	D_{03}	D_{01}	C_{61}	C_{62}	D_{04}	D_{04}
C_{50}	C_{56}	C_{68}	C_{68}	C_{67}	C_{56}	C_{55}	C_{50}	C_{49}	D_{01}	D_{02}	D_{03}	D_{01}	C_{62}	C_{61}	D_{04}	D_{04}
C_{51}	C_{57}	C_{69}	C_{69}	C_{70}	C_{57}	C_{58}	C_{51}	C_{52}	D_{01}	D_{02}	D_{03}	D_{01}	C_{63}	C_{64}	D_{04}	D_{04}
C_{52}	C_{58}	C_{70}	C_{70}	C_{69}	C_{58}	C_{57}	C_{52}	C_{51}	D_{01}	D_{02}	D_{03}	D_{01}	C_{64}	C_{63}	D_{04}	D_{04}
C_{53}	C_{59}	C_{71}	C_{71}	C_{72}	C_{59}	C_{60}	C_{53}	C_{54}	D_{01}	D_{02}	D_{03}	D_{01}	C_{65}	C_{66}	D_{04}	D_{04}
C_{54}	C_{60}	C_{72}	C_{72}	C_{71}	C_{60}	C_{59}	C_{54}	C_{53}	D_{01}	D_{02}	D_{03}	D_{01}	C_{66}	C_{65}	D_{04}	D_{04}
C_{55}	C_{49}	C_{50}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	D_{01}	D_{02}	D_{03}	C_{61}	D_{01}	C_{62}	D_{04}	C_{62}
C_{56}	C_{50}	C_{49}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	D_{01}	D_{02}	D_{03}	C_{62}	D_{01}	C_{61}	D_{04}	C_{61}
C_{57}	C_{51}	C_{52}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	D_{01}	D_{02}	D_{03}	C_{63}	D_{01}	C_{64}	D_{04}	C_{64}
C_{58}	C_{52}	C_{51}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	D_{01}	D_{02}	D_{03}	C_{64}	D_{01}	C_{63}	D_{04}	C_{63}
C_{59}	C_{53}	C_{54}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	D_{01}	D_{02}	D_{03}	C_{65}	D_{01}	C_{66}	D_{04}	C_{66}
C_{60}	C_{54}	C_{53}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	D_{01}	D_{02}	D_{03}	C_{66}	D_{01}	C_{65}	D_{04}	C_{65}
C_{61}	C_{56}	C_{67}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{61}	C_{73}	C_{79}	D_{01}	D_{01}	C_{62}	C_{62}	D_{04}
C_{62}	C_{55}	C_{68}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{62}	C_{74}	C_{80}	D_{01}	D_{01}	C_{61}	C_{61}	D_{04}
C_{63}	C_{58}	C_{69}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{63}	C_{75}	C_{81}	D_{01}	D_{01}	C_{64}	C_{64}	D_{04}
C_{64}	C_{57}	C_{70}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{64}	C_{76}	C_{82}	D_{01}	D_{01}	C_{63}	C_{63}	D_{04}
C_{65}	C_{60}	C_{71}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{65}	C_{77}	C_{83}	D_{01}	D_{01}	C_{66}	C_{66}	D_{04}
C_{66}	C_{59}	C_{72}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{66}	C_{78}	C_{84}	D_{01}	D_{01}	C_{65}	C_{65}	D_{04}
C_{67}	C_{68}	C_{56}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	D_{01}	D_{02}	D_{03}	C_{61}	C_{62}	D_{01}	D_{04}	C_{62}
C_{68}	C_{67}	C_{55}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	D_{01}	D_{02}	D_{03}	C_{62}	C_{61}	D_{01}	D_{04}	C_{61}
C_{69}	C_{70}	C_{58}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	D_{01}	D_{02}	D_{03}	C_{63}	C_{64}	D_{01}	D_{01}	C_{64}
C_{70}	C_{69}	C_{57}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	D_{01}	D_{02}	D_{03}	C_{64}	C_{63}	D_{01}	D_{04}	C_{63}
C_{71}	C_{72}	C_{60}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	D_{01}	D_{02}	D_{03}	C_{65}	C_{66}	D_{01}	D_{04}	C_{66}
C_{72}	C_{71}	C_{59}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	D_{01}	D_{02}	D_{03}	C_{66}	C_{65}	D_{01}	D_{04}	C_{65}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
C_{49}	C_{62}	C_{61}	D_{02}	C_{73}	C_{74}	D_{04}	D_{04}	C_{74}	C_{73}	D_{03}	C_{79}	C_{80}	D_{04}	D_{04}	C_{80}	C_{79}
C_{50}	C_{61}	C_{62}	D_{02}	C_{74}	C_{73}	D_{04}	D_{04}	C_{73}	C_{74}	D_{03}	C_{80}	C_{79}	D_{04}	D_{04}	C_{79}	C_{80}
C_{51}	C_{64}	C_{63}	D_{02}	C_{75}	C_{76}	D_{04}	D_{04}	C_{76}	C_{75}	D_{03}	C_{81}	C_{82}	D_{04}	D_{04}	C_{82}	C_{81}
C_{52}	C_{63}	C_{64}	D_{02}	C_{76}	C_{75}	D_{04}	D_{04}	C_{75}	C_{76}	D_{03}	C_{82}	C_{81}	D_{04}	D_{04}	C_{81}	C_{82}
C_{53}	C_{66}	C_{65}	D_{02}	C_{77}	C_{78}	D_{04}	D_{04}	C_{78}	C_{77}	D_{03}	C_{83}	C_{84}	D_{04}	D_{04}	C_{84}	C_{83}
C_{54}	C_{65}	C_{66}	D_{02}	C_{78}	C_{77}	D_{04}	D_{04}	C_{77}	C_{78}	D_{03}	C_{84}	C_{83}	D_{04}	D_{04}	C_{83}	C_{84}
C_{55}	D_{04}	C_{61}	C_{73}	D_{02}	C_{74}	D_{04}	C_{74}	D_{04}	C_{73}	C_{79}	D_{03}	C_{80}	D_{04}	C_{80}	D_{04}	C_{79}
C_{56}	D_{04}	C_{62}	C_{74}	D_{02}	C_{73}	D_{04}	C_{73}	D_{04}	C_{74}	C_{80}	D_{03}	C_{79}	D_{04}	C_{79}	D_{04}	C_{80}
C_{57}	D_{04}	C_{63}	C_{75}	D_{02}	C_{76}	D_{04}	C_{76}	D_{04}	C_{75}	C_{81}	D_{03}	C_{82}	D_{04}	C_{82}	D_{04}	C_{81}
C_{58}	D_{04}	C_{64}	C_{76}	D_{02}	C_{75}	D_{04}	C_{75}	D_{04}	C_{76}	C_{82}	D_{03}	C_{81}	D_{04}	C_{81}	D_{04}	C_{82}
C_{59}	D_{04}	C_{65}	C_{77}	D_{02}	C_{78}	D_{04}	C_{78}	D_{04}	C_{77}	C_{83}	D_{03}	C_{84}	D_{04}	C_{84}	D_{04}	C_{83}
C_{60}	D_{04}	C_{66}	C_{78}	D_{02}	C_{77}	D_{04}	C_{77}	D_{04}	C_{78}	C_{84}	D_{03}	C_{83}	D_{04}	C_{83}	D_{04}	C_{84}
C_{61}	D_{04}	C_{61}	D_{02}	D_{02}	C_{74}	C_{74}	D_{04}	D_{04}	C_{73}	D_{03}	D_{03}	C_{80}	C_{80}	D_{04}	D_{04}	C_{79}
C_{62}	D_{04}	C_{62}	D_{02}	D_{02}	C_{73}	C_{73}	D_{04}	D_{04}	C_{74}	D_{03}	D_{03}	C_{79}	C_{79}	D_{04}	D_{04}	C_{80}
C_{63}	D_{04}	C_{63}	D_{02}	D_{02}	C_{76}	C_{76}	D_{04}	D_{04}	C_{75}	D_{03}	D_{03}	C_{82}	C_{82}	D_{04}	D_{04}	C_{81}
C_{64}	D_{04}	C_{64}	D_{02}	D_{02}	C_{75}	C_{75}	D_{04}	D_{04}	C_{76}	D_{03}	D_{03}	C_{81}	C_{81}	D_{04}	D_{04}	C_{82}
C_{65}	D_{04}	C_{65}	D_{02}	D_{02}	C_{78}	C_{78}	D_{04}	D_{04}	C_{77}	D_{03}	D_{03}	C_{84}	C_{84}	D_{04}	D_{04}	C_{83}
C_{66}	D_{04}	C_{66}	D_{02}	D_{02}	C_{77}	C_{77}	D_{04}	D_{04}	C_{78}	D_{03}	D_{03}	C_{83}	C_{83}	D_{04}	D_{04}	C_{84}
C_{67}	C_{61}	D_{04}	C_{73}	C_{74}	D_{02}	D_{04}	C_{74}	C_{73}	D_{04}	C_{79}	C_{80}	D_{03}	D_{04}	C_{80}	C_{79}	D_{04}
C_{68}	C_{62}	D_{04}	C_{74}	C_{73}	D_{02}	D_{04}	C_{73}	C_{74}	D_{04}	C_{80}	C_{79}	D_{03}	D_{04}	C_{79}	C_{80}	D_{04}
C_{69}	C_{63}	D_{04}	C_{75}	C_{76}	D_{02}	D_{04}	C_{76}	C_{75}	D_{04}	C_{81}	C_{82}	D_{03}	D_{04}	C_{82}	C_{81}	D_{04}
C_{70}	C_{64}	D_{04}	C_{76}	C_{75}	D_{02}	D_{04}	C_{75}	C_{76}	D_{04}	C_{82}	C_{81}	D_{03}	D_{04}	C_{81}	C_{82}	D_{04}
C_{71}	C_{65}	D_{04}	C_{77}	C_{78}	D_{02}	D_{04}	C_{78}	C_{77}	D_{04}	C_{83}	C_{84}	D_{03}	D_{04}	C_{84}	C_{83}	D_{04}
C_{72}	C_{66}	D_{04}	C_{78}	C_{77}	D_{02}	D_{04}	C_{77}	C_{78}	D_{04}	C_{84}	C_{83}	D_{03}	D_{04}	C_{83}	C_{84}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
C_{49}	D_{01}	D_{01}	C_{49}	C_{50}	D_{02}	D_{02}	C_{50}	C_{49}	D_{01}	D_{01}	C_{55}	C_{56}	D_{03}	D_{03}	C_{56}	C_{55}
C_{50}	D_{01}	D_{01}	C_{50}	C_{49}	D_{02}	D_{02}	C_{49}	C_{50}	D_{01}	D_{01}	C_{56}	C_{55}	D_{03}	D_{03}	C_{55}	C_{56}
C_{51}	D_{01}	D_{01}	C_{51}	C_{52}	D_{02}	D_{02}	C_{52}	C_{51}	D_{01}	D_{01}	C_{57}	C_{58}	D_{03}	D_{03}	C_{58}	C_{57}
C_{52}	D_{01}	D_{01}	C_{52}	C_{51}	D_{02}	D_{02}	C_{51}	C_{52}	D_{01}	D_{01}	C_{58}	C_{57}	D_{03}	D_{03}	C_{57}	C_{58}
C_{53}	D_{01}	D_{01}	C_{53}	C_{54}	D_{02}	D_{02}	C_{54}	C_{53}	D_{01}	D_{01}	C_{59}	C_{60}	D_{03}	D_{03}	C_{60}	C_{59}
C_{54}	D_{01}	D_{01}	C_{54}	C_{53}	D_{02}	D_{02}	C_{53}	C_{54}	D_{01}	D_{01}	C_{60}	C_{59}	D_{03}	D_{03}	C_{59}	C_{60}
C_{55}	D_{01}	C_{49}	D_{01}	C_{50}	D_{02}	C_{50}	D_{02}	C_{49}	D_{01}	C_{55}	D_{01}	C_{56}	D_{03}	C_{56}	D_{03}	C_{55}
C_{56}	D_{01}	C_{50}	D_{01}	C_{49}	D_{02}	C_{49}	D_{02}	C_{50}	D_{01}	C_{56}	D_{01}	C_{55}	D_{03}	C_{55}	D_{03}	C_{56}
C_{57}	D_{01}	C_{51}	D_{01}	C_{52}	D_{02}	C_{52}	D_{02}	C_{51}	D_{01}	C_{57}	D_{01}	C_{58}	D_{03}	C_{58}	D_{03}	C_{57}
C_{58}	D_{01}	C_{52}	D_{01}	C_{51}	D_{02}	C_{51}	D_{02}	C_{52}	D_{01}	C_{58}	D_{01}	C_{57}	D_{03}	C_{57}	D_{03}	C_{58}
C_{59}	D_{01}	C_{53}	D_{01}	C_{54}	D_{02}	C_{54}	D_{02}	C_{53}	D_{01}	C_{59}	D_{01}	C_{60}	D_{03}	C_{60}	D_{03}	C_{59}
C_{60}	D_{01}	C_{54}	D_{01}	C_{53}	D_{02}	C_{53}	D_{02}	C_{54}	D_{01}	C_{60}	D_{01}	C_{59}	D_{03}	C_{59}	D_{03}	C_{60}
C_{61}	C_{49}	D_{01}	D_{01}	C_{50}	C_{50}	D_{02}	D_{02}	C_{49}	C_{55}	D_{01}	D_{01}	C_{56}	C_{56}	D_{03}	D_{03}	C_{55}
C_{62}	C_{50}	D_{01}	D_{01}	C_{49}	C_{49}	D_{02}	D_{02}	C_{50}	C_{56}	D_{01}	D_{01}	C_{55}	C_{55}	D_{03}	D_{03}	C_{56}
C_{63}	C_{51}	D_{01}	D_{01}	C_{52}	C_{52}	D_{02}	D_{02}	C_{51}	C_{57}	D_{01}	D_{01}	C_{58}	C_{58}	D_{03}	D_{03}	C_{57}
C_{64}	C_{52}	D_{01}	D_{01}	C_{51}	C_{51}	D_{02}	D_{02}	C_{52}	C_{58}	D_{01}	D_{01}	C_{57}	C_{57}	D_{03}	D_{03}	C_{58}
C_{65}	C_{53}	D_{01}	D_{01}	C_{54}	C_{54}	D_{02}	D_{02}	C_{53}	C_{59}	D_{01}	D_{01}	C_{60}	C_{60}	D_{03}	D_{03}	C_{59}
C_{66}	C_{54}	D_{01}	D_{01}	C_{53}	C_{53}	D_{02}	D_{02}	C_{54}	C_{60}	D_{01}	D_{01}	C_{59}	C_{59}	D_{03}	D_{03}	C_{60}
C_{67}	D_{01}	C_{49}	C_{50}	D_{01}	D_{02}	C_{50}	C_{49}	D_{02}	D_{01}	C_{55}	C_{56}	D_{01}	C_{56}	C_{56}	C_{55}	D_{03}
C_{68}	D_{01}	C_{50}	C_{49}	D_{01}	D_{02}	C_{49}	C_{50}	D_{02}	D_{01}	C_{56}	C_{55}	D_{01}	C_{55}	C_{55}	C_{56}	D_{03}
C_{69}	D_{01}	C_{51}	C_{52}	D_{01}	D_{02}	C_{52}	C_{51}	D_{02}	D_{01}	C_{57}	C_{58}	D_{01}	C_{58}	C_{58}	C_{57}	D_{03}
C_{70}	D_{01}	C_{52}	C_{51}	D_{01}	D_{02}	C_{51}	C_{52}	D_{02}	D_{01}	C_{58}	C_{57}	D_{01}	C_{57}	C_{57}	C_{58}	D_{03}
C_{71}	D_{01}	C_{53}	C_{54}	D_{01}	D_{02}	C_{54}	C_{53}	D_{02}	D_{01}	C_{59}	C_{60}	D_{01}	C_{60}	C_{60}	C_{59}	D_{03}
C_{72}	D_{01}	C_{54}	C_{53}	D_{01}	D_{02}	C_{53}	C_{54}	D_{02}	D_{01}	C_{60}	C_{59}	D_{01}	C_{59}	C_{59}	C_{60}	D_{03}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
C_{49}	D_{02}	D_{02}	C_{67}	C_{68}	D_{03}	D_{03}	C_{68}	C_{67}	D_{01}	D_{02}	C_{49}	C_{50}	C_{49}	C_{50}	D_{01}	D_{03}
C_{50}	D_{02}	D_{02}	C_{68}	C_{67}	D_{03}	D_{03}	C_{67}	C_{68}	D_{01}	D_{02}	C_{50}	C_{49}	C_{50}	C_{49}	D_{01}	D_{03}
C_{51}	D_{02}	D_{02}	C_{69}	C_{70}	D_{03}	D_{03}	C_{70}	C_{69}	D_{01}	D_{02}	C_{51}	C_{52}	C_{51}	C_{52}	D_{01}	D_{03}
C_{52}	D_{02}	D_{02}	C_{70}	C_{69}	D_{03}	D_{03}	C_{69}	C_{70}	D_{01}	D_{02}	C_{52}	C_{51}	C_{52}	C_{51}	D_{01}	D_{03}
C_{53}	D_{02}	D_{02}	C_{71}	C_{72}	D_{03}	D_{03}	C_{72}	C_{71}	D_{01}	D_{02}	C_{53}	C_{54}	C_{53}	C_{54}	D_{01}	D_{03}
C_{54}	D_{02}	D_{02}	C_{72}	C_{71}	D_{03}	D_{03}	C_{71}	C_{72}	D_{01}	D_{02}	C_{54}	C_{53}	C_{54}	C_{53}	D_{01}	D_{03}
C_{55}	D_{02}	C_{67}	D_{02}	C_{68}	D_{03}	C_{68}	D_{03}	C_{67}	C_{49}	C_{50}	D_{01}	D_{01}	C_{49}	C_{50}	C_{55}	C_{56}
C_{56}	D_{02}	C_{68}	D_{02}	C_{67}	D_{03}	C_{67}	D_{03}	C_{68}	C_{50}	C_{49}	D_{01}	D_{01}	C_{50}	C_{49}	C_{56}	C_{55}
C_{57}	D_{02}	C_{69}	D_{02}	C_{70}	D_{03}	C_{70}	D_{03}	C_{69}	C_{51}	C_{52}	D_{01}	D_{01}	C_{51}	C_{52}	C_{57}	C_{58}
C_{58}	D_{02}	C_{70}	D_{02}	C_{69}	D_{03}	C_{69}	D_{03}	C_{70}	C_{52}	C_{51}	D_{01}	D_{01}	C_{52}	C_{51}	C_{58}	C_{57}
C_{59}	D_{02}	C_{71}	D_{02}	C_{72}	D_{03}	C_{72}	D_{03}	C_{71}	C_{53}	C_{54}	D_{01}	D_{01}	C_{53}	C_{54}	C_{59}	C_{60}
C_{60}	D_{02}	C_{72}	D_{02}	C_{71}	D_{03}	C_{71}	D_{03}	C_{72}	C_{54}	C_{53}	D_{01}	D_{01}	C_{54}	C_{53}	C_{60}	C_{59}
C_{61}	C_{67}	D_{02}	D_{02}	C_{68}	C_{68}	D_{03}	D_{03}	C_{67}	C_{49}	C_{50}	C_{49}	C_{50}	D_{01}	D_{02}	C_{55}	C_{56}
C_{62}	C_{68}	D_{02}	D_{02}	C_{67}	C_{67}	D_{03}	D_{03}	C_{68}	C_{50}	C_{49}	C_{50}	C_{49}	D_{01}	D_{02}	C_{56}	C_{55}
C_{63}	C_{69}	D_{02}	D_{02}	C_{70}	C_{70}	D_{03}	D_{03}	C_{69}	C_{51}	C_{52}	C_{51}	C_{52}	D_{01}	D_{02}	C_{57}	C_{58}
C_{64}	C_{70}	D_{02}	D_{02}	C_{69}	C_{69}	D_{03}	D_{03}	C_{70}	C_{52}	C_{51}	C_{52}	C_{51}	D_{01}	D_{02}	C_{58}	C_{57}
C_{65}	C_{71}	D_{02}	D_{02}	C_{72}	C_{72}	D_{03}	D_{03}	C_{71}	C_{53}	C_{54}	C_{53}	C_{54}	D_{01}	D_{02}	C_{59}	C_{60}
C_{66}	C_{72}	D_{02}	D_{02}	C_{71}	C_{71}	D_{03}	D_{03}	C_{72}	C_{54}	C_{53}	C_{54}	C_{53}	D_{01}	D_{02}	C_{60}	C_{59}
C_{67}	D_{02}	C_{67}	C_{68}	D_{02}	D_{03}	C_{68}	C_{67}	D_{03}	C_{49}	C_{50}	C_{50}	C_{49}	D_{02}	D_{01}	C_{55}	C_{56}
C_{68}	D_{02}	C_{68}	C_{67}	D_{02}	D_{03}	C_{67}	C_{68}	D_{03}	C_{50}	C_{49}	C_{49}	C_{50}	D_{02}	D_{01}	C_{56}	C_{55}
C_{69}	D_{02}	C_{69}	C_{70}	D_{02}	D_{03}	C_{70}	C_{69}	D_{03}	C_{51}	C_{52}	C_{52}	C_{51}	D_{02}	D_{01}	C_{57}	C_{58}
C_{70}	D_{02}	C_{70}	C_{69}	D_{02}	D_{03}	C_{69}	C_{70}	D_{03}	C_{52}	C_{51}	C_{51}	C_{52}	D_{02}	D_{01}	C_{58}	C_{57}
C_{71}	D_{02}	C_{71}	C_{72}	D_{02}	D_{03}	C_{72}	C_{71}	D_{03}	C_{53}	C_{54}	C_{54}	C_{53}	D_{02}	D_{01}	C_{59}	C_{60}
C_{72}	D_{02}	C_{72}	C_{71}	D_{02}	D_{03}	C_{71}	C_{72}	D_{03}	C_{54}	C_{53}	C_{53}	C_{54}	D_{02}	D_{01}	C_{60}	C_{59}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{57}	c_{58}	c_{59}	c_{60}	c_{61}	c_{62}	c_{63}	c_{64}	c_{65}	c_{66}	c_{67}	c_{68}	c_{69}	c_{70}	c_{71}	c_{72}
c_{49}	c_{55}	c_{56}	c_{55}	c_{56}	D_{01}	D_{04}	c_{61}	c_{62}	c_{61}	c_{62}	D_{02}	D_{03}	c_{67}	c_{68}	c_{67}	c_{68}
c_{50}	c_{56}	c_{55}	c_{56}	c_{55}	D_{01}	D_{04}	c_{62}	c_{61}	c_{62}	c_{61}	D_{02}	D_{03}	c_{68}	c_{67}	c_{68}	c_{67}
c_{51}	c_{57}	c_{58}	c_{57}	c_{58}	D_{01}	D_{04}	c_{63}	c_{64}	c_{63}	c_{64}	D_{02}	D_{03}	c_{69}	c_{70}	c_{69}	c_{70}
c_{52}	c_{58}	c_{57}	c_{58}	c_{57}	D_{01}	D_{04}	c_{64}	c_{63}	c_{64}	c_{63}	D_{02}	D_{03}	c_{70}	c_{69}	c_{70}	c_{69}
c_{53}	c_{59}	c_{60}	c_{59}	c_{60}	D_{01}	D_{04}	c_{65}	c_{66}	c_{65}	c_{66}	D_{02}	D_{03}	c_{71}	c_{72}	c_{71}	c_{72}
c_{54}	c_{60}	c_{59}	c_{60}	c_{59}	D_{01}	D_{04}	c_{66}	c_{65}	c_{66}	c_{65}	D_{02}	D_{03}	c_{72}	c_{71}	c_{72}	c_{71}
c_{55}	D_{01}	D_{03}	c_{55}	c_{56}	c_{61}	c_{62}	D_{01}	D_{04}	c_{61}	c_{62}	c_{67}	c_{68}	D_{02}	D_{03}	c_{67}	c_{68}
c_{56}	D_{01}	D_{03}	c_{56}	c_{55}	c_{62}	c_{61}	D_{01}	D_{04}	c_{62}	c_{61}	c_{68}	c_{67}	D_{02}	D_{03}	c_{68}	c_{67}
c_{57}	D_{01}	D_{03}	c_{57}	c_{58}	c_{63}	c_{64}	D_{01}	D_{04}	c_{63}	c_{64}	c_{69}	c_{70}	D_{02}	D_{03}	c_{69}	c_{70}
c_{58}	D_{01}	D_{03}	c_{58}	c_{57}	c_{64}	c_{63}	D_{01}	D_{04}	c_{64}	c_{63}	c_{70}	c_{69}	D_{02}	D_{03}	c_{70}	c_{69}
c_{59}	D_{01}	D_{03}	c_{59}	c_{60}	c_{65}	c_{66}	D_{01}	D_{04}	c_{65}	c_{66}	c_{71}	c_{72}	D_{02}	D_{03}	c_{71}	c_{72}
c_{60}	D_{01}	D_{03}	c_{60}	c_{59}	c_{66}	c_{65}	D_{01}	D_{04}	c_{66}	c_{65}	c_{72}	c_{71}	D_{02}	D_{03}	c_{72}	c_{71}
c_{61}	c_{55}	c_{56}	D_{01}	D_{03}	c_{61}	c_{62}	c_{61}	c_{62}	D_{01}	D_{04}	c_{67}	c_{68}	c_{67}	c_{68}	D_{02}	D_{03}
c_{62}	c_{56}	c_{55}	D_{01}	D_{03}	c_{62}	c_{61}	c_{62}	c_{61}	D_{01}	D_{04}	c_{68}	c_{67}	c_{68}	c_{67}	D_{02}	D_{03}
c_{63}	c_{57}	c_{58}	D_{01}	D_{03}	c_{63}	c_{64}	c_{63}	c_{64}	D_{01}	D_{04}	c_{69}	c_{70}	c_{69}	c_{70}	D_{02}	D_{03}
c_{64}	c_{58}	c_{57}	D_{01}	D_{03}	c_{64}	c_{63}	c_{64}	c_{63}	D_{01}	D_{04}	c_{70}	c_{69}	c_{70}	c_{69}	D_{02}	D_{03}
c_{65}	c_{59}	c_{60}	D_{01}	D_{03}	c_{65}	c_{66}	c_{65}	c_{66}	D_{01}	D_{04}	c_{71}	c_{72}	c_{71}	c_{72}	D_{02}	D_{03}
c_{66}	c_{60}	c_{59}	D_{01}	D_{03}	c_{66}	c_{65}	c_{66}	c_{65}	D_{01}	D_{04}	c_{72}	c_{71}	c_{72}	c_{71}	D_{02}	D_{03}
c_{67}	c_{56}	c_{55}	D_{03}	D_{01}	c_{61}	c_{62}	c_{62}	c_{61}	D_{04}	D_{01}	c_{67}	c_{68}	c_{68}	c_{67}	D_{03}	D_{02}
c_{68}	c_{55}	c_{56}	D_{03}	D_{01}	c_{62}	c_{61}	c_{61}	c_{62}	D_{04}	D_{01}	c_{68}	c_{67}	c_{67}	c_{68}	D_{03}	D_{02}
c_{69}	c_{58}	c_{57}	D_{03}	D_{01}	c_{63}	c_{64}	c_{64}	c_{63}	D_{04}	D_{01}	c_{69}	c_{70}	c_{70}	c_{69}	D_{03}	D_{02}
c_{70}	c_{57}	c_{58}	D_{03}	D_{01}	c_{64}	c_{63}	c_{63}	c_{64}	D_{04}	D_{01}	c_{70}	c_{69}	c_{69}	c_{70}	D_{03}	D_{02}
c_{71}	c_{60}	c_{59}	D_{03}	D_{01}	c_{65}	c_{66}	c_{66}	c_{65}	D_{04}	D_{01}	c_{71}	c_{72}	c_{72}	c_{71}	D_{03}	D_{02}
c_{72}	c_{59}	c_{60}	D_{03}	D_{01}	c_{66}	c_{65}	c_{65}	c_{66}	D_{04}	D_{01}	c_{72}	c_{71}	c_{71}	c_{72}	D_{03}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	c_{73}	c_{74}	c_{75}	c_{76}	c_{77}	c_{78}	c_{79}	c_{80}	c_{81}	c_{82}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
c_{49}	D_{02}	D_{04}	c_{73}	c_{74}	c_{73}	c_{74}	D_{03}	D_{04}	c_{79}	c_{80}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
c_{50}	D_{02}	D_{04}	c_{74}	c_{73}	c_{74}	c_{73}	D_{03}	D_{04}	c_{80}	c_{79}	c_{80}	c_{79}	D_{01}	D_{02}	D_{03}	D_{04}
c_{51}	D_{02}	D_{04}	c_{75}	c_{76}	c_{75}	c_{76}	D_{03}	D_{04}	c_{81}	c_{82}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
c_{52}	D_{02}	D_{04}	c_{76}	c_{75}	c_{76}	c_{75}	D_{03}	D_{04}	c_{82}	c_{81}	c_{82}	c_{81}	D_{01}	D_{02}	D_{03}	D_{04}
c_{53}	D_{02}	D_{04}	c_{77}	c_{78}	c_{77}	c_{78}	D_{03}	D_{04}	c_{83}	c_{84}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
c_{54}	D_{02}	D_{04}	c_{78}	c_{77}	c_{78}	c_{77}	D_{03}	D_{04}	c_{84}	c_{83}	c_{84}	c_{83}	D_{01}	D_{02}	D_{03}	D_{04}
c_{55}	c_{73}	c_{74}	D_{02}	D_{04}	c_{73}	c_{74}	c_{79}	c_{80}	D_{03}	D_{04}	c_{79}	c_{80}	D_{01}	D_{02}	D_{03}	D_{04}
c_{56}	c_{74}	c_{73}	D_{02}	D_{04}	c_{74}	c_{73}	c_{80}	c_{79}	D_{03}	D_{04}	c_{80}	c_{79}	D_{01}	D_{02}	D_{03}	D_{04}
c_{57}	c_{75}	c_{76}	D_{02}	D_{04}	c_{75}	c_{76}	c_{81}	c_{82}	D_{03}	D_{04}	c_{81}	c_{82}	D_{01}	D_{02}	D_{03}	D_{04}
c_{58}	c_{76}	c_{75}	D_{02}	D_{04}	c_{76}	c_{75}	c_{82}	c_{81}	D_{03}	D_{04}	c_{82}	c_{81}	D_{01}	D_{02}	D_{03}	D_{04}
c_{59}	c_{77}	c_{78}	D_{02}	D_{04}	c_{77}	c_{78}	c_{83}	c_{84}	D_{03}	D_{04}	c_{83}	c_{84}	D_{01}	D_{02}	D_{03}	D_{04}
c_{60}	c_{78}	c_{77}	D_{02}	D_{04}	c_{78}	c_{77}	c_{84}	c_{83}	D_{03}	D_{04}	c_{84}	c_{83}	D_{01}	D_{02}	D_{03}	D_{04}
c_{61}	c_{73}	c_{74}	c_{73}	c_{74}	D_{02}	D_{04}	c_{79}	c_{80}	c_{79}	c_{80}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{62}	c_{74}	c_{73}	c_{74}	c_{73}	D_{02}	D_{04}	c_{80}	c_{79}	c_{80}	c_{79}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{63}	c_{75}	c_{76}	c_{75}	c_{76}	D_{02}	D_{04}	c_{81}	c_{82}	c_{81}	c_{82}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{64}	c_{76}	c_{75}	c_{76}	c_{75}	D_{02}	D_{04}	c_{82}	c_{81}	c_{82}	c_{81}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{65}	c_{77}	c_{78}	c_{77}	c_{78}	D_{02}	D_{04}	c_{83}	c_{84}	c_{83}	c_{84}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{66}	c_{78}	c_{77}	c_{78}	c_{77}	D_{02}	D_{04}	c_{84}	c_{83}	c_{84}	c_{83}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
c_{67}	c_{73}	c_{74}	c_{74}	c_{73}	D_{04}	D_{02}	c_{79}	c_{80}	c_{80}	c_{79}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
c_{68}	c_{74}	c_{73}	c_{73}	c_{74}	D_{04}	D_{02}	c_{80}	c_{79}	c_{79}	c_{80}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
c_{69}	c_{75}	c_{76}	c_{76}	c_{75}	D_{04}	D_{02}	c_{81}	c_{82}	c_{82}	c_{81}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
c_{70}	c_{76}	c_{75}	c_{75}	c_{76}	D_{04}	D_{02}	c_{82}	c_{81}	c_{81}	c_{82}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
c_{71}	c_{77}	c_{78}	c_{78}	c_{77}	D_{04}	D_{02}	c_{83}	c_{84}	c_{84}	c_{83}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
c_{72}	c_{78}	c_{77}	c_{77}	c_{78}	D_{04}	D_{02}	c_{84}	c_{83}	c_{83}	c_{84}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{01}	A_{02}	A_{03}	A_{04}	A_{05}	A_{06}	A_{07}	A_{08}	A_{09}	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}
c_{73}	c_{73}	c_{79}	c_{61}	c_{79}	c_{61}	c_{73}	c_{67}	c_{80}	c_{68}	c_{74}	c_{55}	c_{80}	c_{56}	c_{62}	c_{49}	c_{74}
c_{74}	c_{74}	c_{80}	c_{62}	c_{80}	c_{62}	c_{74}	c_{68}	c_{79}	c_{67}	c_{73}	c_{56}	c_{79}	c_{55}	c_{61}	c_{50}	c_{73}
c_{75}	c_{75}	c_{81}	c_{63}	c_{81}	c_{63}	c_{75}	c_{69}	c_{82}	c_{70}	c_{76}	c_{57}	c_{82}	c_{58}	c_{64}	c_{51}	c_{76}
c_{76}	c_{76}	c_{82}	c_{64}	c_{82}	c_{64}	c_{76}	c_{70}	c_{81}	c_{69}	c_{75}	c_{58}	c_{81}	c_{57}	c_{63}	c_{52}	c_{75}
c_{77}	c_{77}	c_{83}	c_{65}	c_{83}	c_{65}	c_{77}	c_{71}	c_{84}	c_{72}	c_{78}	c_{59}	c_{84}	c_{60}	c_{66}	c_{53}	c_{78}
c_{78}	c_{78}	c_{84}	c_{66}	c_{84}	c_{66}	c_{78}	c_{72}	c_{83}	c_{71}	c_{77}	c_{60}	c_{83}	c_{59}	c_{65}	c_{54}	c_{77}
c_{79}	c_{79}	c_{73}	c_{79}	c_{61}	c_{73}	c_{61}	c_{80}	c_{67}	c_{74}	c_{68}	c_{80}	c_{55}	c_{62}	c_{56}	c_{74}	c_{49}
c_{80}	c_{80}	c_{74}	c_{80}	c_{62}	c_{74}	c_{62}	c_{79}	c_{68}	c_{73}	c_{67}	c_{79}	c_{56}	c_{61}	c_{55}	c_{73}	c_{50}
c_{81}	c_{81}	c_{75}	c_{81}	c_{63}	c_{75}	c_{63}	c_{82}	c_{69}	c_{76}	c_{70}	c_{82}	c_{57}	c_{64}	c_{58}	c_{76}	c_{51}
c_{82}	c_{82}	c_{76}	c_{82}	c_{64}	c_{76}	c_{64}	c_{81}	c_{70}	c_{75}	c_{69}	c_{81}	c_{58}	c_{63}	c_{57}	c_{75}	c_{52}
c_{83}	c_{83}	c_{77}	c_{83}	c_{65}	c_{77}	c_{65}	c_{84}	c_{71}	c_{78}	c_{72}	c_{84}	c_{59}	c_{66}	c_{60}	c_{78}	c_{53}
c_{84}	c_{84}	c_{78}	c_{84}	c_{66}	c_{78}	c_{66}	c_{83}	c_{72}	c_{77}	c_{71}	c_{83}	c_{60}	c_{65}	c_{59}	c_{77}	c_{54}
D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{01}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{02}	D_{02}	D_{03}	D_{03}
D_{02}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}	D_{02}	D_{04}	D_{03}	D_{04}	D_{01}	D_{04}	D_{03}	D_{04}	D_{01}	D_{04}
D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}	D_{04}	D_{02}	D_{04}	D_{03}	D_{04}	D_{01}	D_{04}	D_{03}	D_{04}	D_{01}
D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{03}	D_{03}	D_{02}	D_{02}	D_{03}	D_{03}	D_{01}	D_{01}	D_{02}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	A_{17}	A_{18}	A_{19}	A_{20}	A_{21}	A_{22}	A_{23}	A_{24}	B_{01}	B_{02}	B_{03}	B_{04}	B_{05}	B_{06}	B_{07}	B_{08}
C_{73}	C_{50}	C_{62}	C_{55}	C_{49}	C_{67}	C_{68}	C_{50}	C_{56}	C_{73}	C_{73}	C_{61}	C_{73}	C_{61}	C_{61}	C_{79}	C_{61}
C_{74}	C_{49}	C_{61}	C_{56}	C_{50}	C_{68}	C_{67}	C_{49}	C_{55}	C_{74}	C_{74}	C_{62}	C_{74}	C_{62}	C_{62}	C_{80}	C_{62}
C_{75}	C_{52}	C_{64}	C_{57}	C_{51}	C_{69}	C_{70}	C_{52}	C_{58}	C_{75}	C_{75}	C_{63}	C_{75}	C_{63}	C_{63}	C_{81}	C_{63}
C_{76}	C_{51}	C_{63}	C_{58}	C_{52}	C_{70}	C_{69}	C_{51}	C_{57}	C_{76}	C_{76}	C_{64}	C_{76}	C_{64}	C_{64}	C_{82}	C_{64}
C_{77}	C_{54}	C_{66}	C_{59}	C_{53}	C_{71}	C_{72}	C_{54}	C_{60}	C_{77}	C_{77}	C_{65}	C_{77}	C_{65}	C_{65}	C_{83}	C_{65}
C_{78}	C_{53}	C_{65}	C_{60}	C_{54}	C_{72}	C_{71}	C_{53}	C_{59}	C_{78}	C_{78}	C_{66}	C_{78}	C_{66}	C_{66}	C_{84}	C_{66}
C_{79}	C_{62}	C_{50}	C_{67}	C_{68}	C_{55}	C_{49}	C_{56}	C_{50}	C_{73}	C_{61}	C_{73}	C_{61}	C_{61}	C_{73}	C_{79}	C_{79}
C_{80}	C_{61}	C_{49}	C_{68}	C_{67}	C_{56}	C_{50}	C_{55}	C_{49}	C_{74}	C_{62}	C_{74}	C_{62}	C_{62}	C_{74}	C_{80}	C_{80}
C_{81}	C_{64}	C_{52}	C_{69}	C_{70}	C_{57}	C_{51}	C_{58}	C_{52}	C_{75}	C_{63}	C_{75}	C_{63}	C_{63}	C_{75}	C_{81}	C_{81}
C_{82}	C_{63}	C_{51}	C_{70}	C_{69}	C_{58}	C_{52}	C_{57}	C_{51}	C_{76}	C_{64}	C_{76}	C_{64}	C_{64}	C_{76}	C_{82}	C_{82}
C_{83}	C_{66}	C_{54}	C_{71}	C_{72}	C_{59}	C_{53}	C_{60}	C_{54}	C_{77}	C_{65}	C_{77}	C_{65}	C_{65}	C_{77}	C_{83}	C_{83}
C_{84}	C_{65}	C_{53}	C_{72}	C_{71}	C_{60}	C_{54}	C_{59}	C_{53}	C_{78}	C_{66}	C_{78}	C_{66}	C_{66}	C_{78}	C_{84}	C_{84}
D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{02}	D_{01}	D_{01}
D_{02}	D_{02}	D_{04}	D_{01}	D_{01}	D_{02}	D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{03}	D_{01}
D_{03}	D_{04}	D_{02}	D_{02}	D_{03}	D_{01}	D_{01}	D_{03}	D_{02}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{03}	D_{03}
D_{04}	D_{01}	D_{01}	D_{03}	D_{02}	D_{03}	D_{02}	D_{01}	D_{01}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{09}	B_{10}	B_{11}	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}	B_{17}	B_{18}	B_{19}	B_{20}	B_{21}	B_{22}	B_{23}	B_{24}
C_{73}	C_{79}	C_{61}	C_{61}	C_{79}	C_{73}	C_{73}	C_{73}	C_{79}	C_{79}	C_{79}	C_{49}	C_{50}	C_{74}	C_{62}	C_{74}	C_{62}
C_{74}	C_{80}	C_{62}	C_{62}	C_{80}	C_{74}	C_{74}	C_{74}	C_{80}	C_{80}	C_{80}	C_{50}	C_{49}	C_{73}	C_{61}	C_{73}	C_{61}
C_{75}	C_{81}	C_{63}	C_{63}	C_{81}	C_{75}	C_{75}	C_{75}	C_{81}	C_{81}	C_{81}	C_{51}	C_{52}	C_{76}	C_{64}	C_{76}	C_{64}
C_{76}	C_{82}	C_{64}	C_{64}	C_{82}	C_{76}	C_{76}	C_{76}	C_{82}	C_{82}	C_{82}	C_{52}	C_{51}	C_{75}	C_{63}	C_{75}	C_{63}
C_{77}	C_{83}	C_{65}	C_{65}	C_{83}	C_{77}	C_{77}	C_{77}	C_{83}	C_{83}	C_{83}	C_{53}	C_{54}	C_{78}	C_{66}	C_{78}	C_{66}
C_{78}	C_{84}	C_{66}	C_{66}	C_{84}	C_{78}	C_{78}	C_{78}	C_{84}	C_{84}	C_{84}	C_{54}	C_{53}	C_{77}	C_{65}	C_{77}	C_{65}
C_{79}	C_{61}	C_{79}	C_{61}	C_{61}	C_{79}	C_{79}	C_{73}	C_{73}	C_{79}	C_{73}	C_{74}	C_{62}	C_{49}	C_{50}	C_{49}	C_{50}
C_{80}	C_{62}	C_{80}	C_{62}	C_{62}	C_{80}	C_{80}	C_{74}	C_{74}	C_{80}	C_{74}	C_{73}	C_{61}	C_{50}	C_{49}	C_{50}	C_{49}
C_{81}	C_{63}	C_{81}	C_{63}	C_{63}	C_{81}	C_{81}	C_{75}	C_{75}	C_{81}	C_{75}	C_{76}	C_{64}	C_{51}	C_{52}	C_{51}	C_{52}
C_{82}	C_{64}	C_{82}	C_{64}	C_{64}	C_{82}	C_{82}	C_{76}	C_{76}	C_{82}	C_{76}	C_{75}	C_{63}	C_{52}	C_{51}	C_{52}	C_{51}
C_{83}	C_{65}	C_{83}	C_{65}	C_{65}	C_{83}	C_{83}	C_{77}	C_{77}	C_{83}	C_{77}	C_{78}	C_{66}	C_{53}	C_{54}	C_{53}	C_{54}
C_{84}	C_{66}	C_{84}	C_{66}	C_{66}	C_{84}	C_{84}	C_{78}	C_{78}	C_{84}	C_{78}	C_{77}	C_{65}	C_{54}	C_{53}	C_{54}	C_{53}
D_{01}	D_{01}	D_{03}	D_{03}	D_{03}	D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	D_{01}	D_{02}
D_{02}	D_{03}	D_{01}	D_{01}	D_{03}	D_{02}	D_{02}	D_{02}	D_{03}	D_{03}	D_{03}	D_{01}	D_{02}	D_{04}	D_{04}	D_{04}	D_{04}
D_{03}	D_{01}	D_{03}	D_{01}	D_{01}	D_{03}	D_{03}	D_{02}	D_{02}	D_{03}	D_{02}	D_{04}	D_{04}	D_{01}	D_{02}	D_{01}	D_{02}
D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{04}	D_{02}	D_{01}	D_{02}	D_{01}	D_{02}	D_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{25}	B_{26}	B_{27}	B_{28}	B_{29}	B_{30}	B_{31}	B_{32}	B_{33}	B_{34}	B_{35}	B_{36}	B_{37}	B_{38}	B_{39}	B_{40}
C_{73}	C_{49}	C_{50}	C_{50}	C_{62}	C_{49}	C_{74}	C_{61}	C_{73}	C_{49}	C_{50}	C_{74}	C_{62}	D_{01}	D_{01}	D_{02}	D_{02}
C_{74}	C_{50}	C_{49}	C_{49}	C_{61}	C_{50}	C_{73}	C_{62}	C_{74}	C_{50}	C_{49}	C_{73}	C_{61}	D_{01}	D_{01}	D_{02}	D_{02}
C_{75}	C_{51}	C_{52}	C_{52}	C_{64}	C_{51}	C_{76}	C_{63}	C_{75}	C_{51}	C_{52}	C_{76}	C_{64}	D_{01}	D_{01}	D_{02}	D_{02}
C_{76}	C_{52}	C_{51}	C_{51}	C_{63}	C_{52}	C_{75}	C_{64}	C_{76}	C_{52}	C_{51}	C_{75}	C_{63}	D_{01}	D_{01}	D_{02}	D_{02}
C_{77}	C_{53}	C_{54}	C_{54}	C_{66}	C_{53}	C_{78}	C_{65}	C_{77}	C_{53}	C_{54}	C_{78}	C_{66}	D_{01}	D_{01}	D_{02}	D_{02}
C_{78}	C_{54}	C_{53}	C_{53}	C_{65}	C_{54}	C_{77}	C_{66}	C_{78}	C_{54}	C_{53}	C_{77}	C_{65}	D_{01}	D_{01}	D_{02}	D_{02}
C_{79}	C_{74}	C_{62}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	C_{49}	C_{50}	C_{74}	C_{62}	C_{62}	C_{50}	C_{74}	C_{49}
C_{80}	C_{73}	C_{61}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	C_{50}	C_{49}	C_{73}	C_{61}	C_{61}	C_{49}	C_{73}	C_{50}
C_{81}	C_{76}	C_{64}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	C_{51}	C_{52}	C_{76}	C_{64}	C_{64}	C_{52}	C_{76}	C_{51}
C_{82}	C_{75}	C_{63}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	C_{52}	C_{51}	C_{75}	C_{63}	C_{63}	C_{51}	C_{75}	C_{52}
C_{83}	C_{78}	C_{66}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	C_{53}	C_{54}	C_{78}	C_{66}	C_{66}	C_{54}	C_{78}	C_{53}
C_{84}	C_{77}	C_{65}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	C_{54}	C_{53}	C_{77}	C_{65}	C_{65}	C_{53}	C_{77}	C_{54}
D_{01}	D_{04}	D_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{04}	D_{04}	D_{01}	D_{02}	D_{02}	D_{04}	D_{01}	D_{04}
D_{02}	D_{01}	D_{02}	D_{02}	D_{04}	D_{01}	D_{04}	D_{01}	D_{02}	D_{01}	D_{02}	D_{04}	D_{04}	D_{01}	D_{01}	D_{02}	D_{02}
D_{03}	D_{04}	D_{04}	D_{04}	D_{02}	D_{04}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{04}	D_{04}	D_{04}	D_{02}	D_{04}	D_{01}
D_{04}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{41}	B_{42}	B_{43}	B_{44}	B_{45}	B_{46}	B_{47}	B_{48}	B_{49}	B_{50}	B_{51}	B_{52}	B_{53}	B_{54}	B_{55}	B_{56}
C_{73}	D_{04}	D_{04}	C_{62}	C_{50}	C_{74}	C_{49}	C_{73}	C_{61}	C_{80}	C_{62}	C_{55}	C_{56}	C_{80}	C_{62}	C_{55}	C_{56}
C_{74}	D_{04}	D_{04}	C_{61}	C_{49}	C_{73}	C_{50}	C_{74}	C_{62}	C_{79}	C_{61}	C_{56}	C_{55}	C_{79}	C_{61}	C_{56}	C_{55}
C_{75}	D_{04}	D_{04}	C_{64}	C_{52}	C_{76}	C_{51}	C_{75}	C_{63}	C_{82}	C_{64}	C_{57}	C_{58}	C_{82}	C_{64}	C_{57}	C_{58}
C_{76}	D_{04}	D_{04}	C_{63}	C_{51}	C_{75}	C_{52}	C_{76}	C_{64}	C_{81}	C_{63}	C_{58}	C_{57}	C_{81}	C_{63}	C_{58}	C_{57}
C_{77}	D_{04}	D_{04}	C_{66}	C_{54}	C_{78}	C_{53}	C_{77}	C_{65}	C_{84}	C_{66}	C_{59}	C_{60}	C_{84}	C_{66}	C_{59}	C_{60}
C_{78}	D_{04}	D_{04}	C_{65}	C_{53}	C_{77}	C_{54}	C_{78}	C_{66}	C_{83}	C_{65}	C_{60}	C_{59}	C_{83}	C_{65}	C_{60}	C_{59}
C_{79}	C_{73}	C_{61}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{55}	C_{56}	C_{80}	C_{62}	C_{55}	C_{56}	C_{80}	C_{62}
C_{80}	C_{74}	C_{62}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{56}	C_{55}	C_{79}	C_{61}	C_{56}	C_{55}	C_{79}	C_{61}
C_{81}	C_{75}	C_{63}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{57}	C_{58}	C_{82}	C_{64}	C_{57}	C_{58}	C_{82}	C_{64}
C_{82}	C_{76}	C_{64}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{58}	C_{57}	C_{81}	C_{63}	C_{58}	C_{57}	C_{81}	C_{63}
C_{83}	C_{77}	C_{65}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{59}	C_{60}	C_{84}	C_{66}	C_{59}	C_{60}	C_{84}	C_{66}
C_{84}	C_{78}	C_{66}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	C_{60}	C_{59}	C_{83}	C_{65}	C_{60}	C_{59}	C_{83}	C_{65}
D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{01}	D_{04}	D_{01}	D_{02}	D_{04}	D_{04}	D_{04}	D_{04}	D_{01}	D_{03}	D_{01}	D_{03}
D_{02}	D_{04}	D_{04}	D_{04}	D_{02}	D_{04}	D_{01}	D_{02}	D_{01}	D_{04}	D_{04}	D_{01}	D_{03}	D_{04}	D_{04}	D_{01}	D_{03}
D_{03}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{01}	D_{03}	D_{04}	D_{04}	D_{01}	D_{03}	D_{04}	D_{04}
D_{04}	D_{04}	D_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{03}	D_{01}	D_{03}	D_{01}	D_{03}	D_{01}	D_{03}	D_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{57}	B_{58}	B_{59}	B_{60}	B_{61}	B_{62}	B_{63}	B_{64}	B_{65}	B_{66}	B_{67}	B_{68}	B_{69}	B_{70}	B_{71}	B_{72}
C_{73}	C_{56}	C_{62}	C_{55}	C_{80}	C_{61}	C_{79}	C_{55}	C_{56}	C_{80}	C_{62}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{74}	C_{55}	C_{61}	C_{56}	C_{79}	C_{62}	C_{80}	C_{56}	C_{55}	C_{79}	C_{61}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{75}	C_{58}	C_{64}	C_{57}	C_{82}	C_{63}	C_{81}	C_{57}	C_{58}	C_{82}	C_{64}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{76}	C_{57}	C_{63}	C_{58}	C_{81}	C_{64}	C_{82}	C_{58}	C_{57}	C_{81}	C_{63}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{77}	C_{60}	C_{66}	C_{59}	C_{84}	C_{65}	C_{83}	C_{59}	C_{60}	C_{84}	C_{66}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{78}	C_{59}	C_{65}	C_{60}	C_{83}	C_{66}	C_{84}	C_{60}	C_{59}	C_{83}	C_{65}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
C_{79}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	C_{55}	C_{56}	C_{80}	C_{62}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}
C_{80}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	C_{56}	C_{55}	C_{79}	C_{61}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}
C_{81}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	C_{57}	C_{58}	C_{82}	C_{64}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}
C_{82}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	C_{58}	C_{57}	C_{81}	C_{63}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}
C_{83}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	C_{59}	C_{60}	C_{84}	C_{66}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}
C_{84}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	C_{60}	C_{59}	C_{83}	C_{65}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}
D_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{04}	D_{01}	D_{03}	D_{03}	D_{04}	D_{01}	D_{04}	D_{01}	D_{03}
D_{02}	D_{03}	D_{04}	D_{01}	D_{04}	D_{01}	D_{03}	D_{01}	D_{03}	D_{04}	D_{04}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}
D_{03}	D_{04}	D_{03}	D_{04}	D_{01}	D_{03}	D_{01}	D_{01}	D_{03}	D_{04}	D_{04}	D_{04}	D_{03}	D_{04}	D_{01}	D_{03}	D_{01}
D_{04}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	D_{03}	D_{01}	D_{03}	D_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}

	E_{73}	B_{74}	B_{75}	B_{76}	B_{77}	B_{78}	B_{79}	B_{80}	B_{81}	B_{82}	B_{83}	B_{84}	B_{85}	B_{86}	B_{87}	B_{88}
C_{73}	C_{62}	C_{56}	C_{80}	C_{55}	C_{79}	C_{61}	C_{67}	C_{68}	C_{80}	C_{74}	C_{80}	C_{74}	C_{67}	C_{68}	C_{68}	C_{74}
C_{74}	C_{61}	C_{55}	C_{79}	C_{56}	C_{80}	C_{62}	C_{68}	C_{67}	C_{79}	C_{73}	C_{79}	C_{73}	C_{68}	C_{67}	C_{67}	C_{73}
C_{75}	C_{64}	C_{58}	C_{82}	C_{57}	C_{81}	C_{63}	C_{69}	C_{70}	C_{82}	C_{75}	C_{82}	C_{76}	C_{69}	C_{70}	C_{70}	C_{76}
C_{76}	C_{63}	C_{57}	C_{81}	C_{58}	C_{82}	C_{64}	C_{70}	C_{69}	C_{81}	C_{75}	C_{81}	C_{75}	C_{70}	C_{69}	C_{69}	C_{75}
C_{77}	C_{66}	C_{60}	C_{84}	C_{59}	C_{83}	C_{65}	C_{71}	C_{72}	C_{84}	C_{78}	C_{84}	C_{78}	C_{71}	C_{72}	C_{72}	C_{78}
C_{78}	C_{65}	C_{59}	C_{83}	C_{60}	C_{84}	C_{66}	C_{72}	C_{71}	C_{83}	C_{77}	C_{83}	C_{77}	C_{72}	C_{71}	C_{71}	C_{77}
C_{79}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{80}	C_{74}	C_{67}	C_{68}	C_{67}	C_{68}	C_{80}	C_{74}	C_{74}	C_{68}
C_{80}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{79}	C_{73}	C_{68}	C_{67}	C_{68}	C_{67}	C_{79}	C_{73}	C_{73}	C_{67}
C_{81}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{82}	C_{76}	C_{69}	C_{70}	C_{69}	C_{70}	C_{82}	C_{76}	C_{76}	C_{70}
C_{82}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{81}	C_{75}	C_{70}	C_{69}	C_{70}	C_{69}	C_{81}	C_{75}	C_{75}	C_{69}
C_{83}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{84}	C_{78}	C_{71}	C_{72}	C_{71}	C_{72}	C_{84}	C_{78}	C_{78}	C_{72}
C_{84}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	C_{83}	C_{77}	C_{72}	C_{71}	C_{72}	C_{71}	C_{83}	C_{77}	C_{77}	C_{71}
D_{01}	D_{03}	D_{04}	D_{01}	D_{04}	D_{01}	D_{03}	D_{02}	D_{03}	D_{04}	D_{04}	D_{02}	D_{03}	D_{04}	D_{04}	D_{02}	D_{02}
D_{02}	D_{04}	D_{03}	D_{04}	D_{01}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}	D_{04}	D_{04}	D_{04}	D_{02}	D_{03}	D_{03}	D_{04}
D_{03}	D_{01}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{04}	D_{04}	D_{02}	D_{03}	D_{02}	D_{03}	D_{04}	D_{04}	D_{04}	D_{03}
D_{04}	D_{01}	D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	D_{03}	D_{02}	D_{03}	D_{02}	D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B_{89}	B_{90}	B_{91}	B_{92}	B_{93}	B_{94}	B_{95}	B_{96}	B_{97}	B_{98}	B_{99}	B'_{01}	B'_{02}	B'_{03}	B'_{04}	B'_{05}
C_{73}	C_{67}	C_{80}	C_{73}	C_{79}	C_{67}	C_{68}	C_{80}	C_{74}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{74}	C_{68}
C_{74}	C_{68}	C_{79}	C_{74}	C_{80}	C_{68}	C_{67}	C_{79}	C_{73}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{73}	C_{67}
C_{75}	C_{69}	C_{82}	C_{75}	C_{81}	C_{69}	C_{70}	C_{82}	C_{76}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{76}	C_{70}
C_{76}	C_{70}	C_{81}	C_{76}	C_{82}	C_{70}	C_{69}	C_{81}	C_{75}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{75}	C_{69}
C_{77}	C_{71}	C_{84}	C_{77}	C_{83}	C_{71}	C_{72}	C_{84}	C_{78}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{78}	C_{72}
C_{78}	C_{72}	C_{83}	C_{78}	C_{84}	C_{72}	C_{71}	C_{83}	C_{77}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	C_{77}	C_{71}
C_{79}	C_{80}	C_{67}	C_{79}	C_{73}	C_{67}	C_{78}	C_{80}	C_{74}	C_{74}	C_{68}	C_{80}	C_{67}	C_{79}	C_{73}	D_{02}	D_{02}
C_{80}	C_{79}	C_{68}	C_{80}	C_{74}	C_{68}	C_{67}	C_{79}	C_{73}	C_{73}	C_{67}	C_{79}	C_{68}	C_{80}	C_{74}	D_{02}	D_{02}
C_{81}	C_{82}	C_{69}	C_{81}	C_{75}	C_{69}	C_{70}	C_{82}	C_{76}	C_{76}	C_{70}	C_{82}	C_{69}	C_{81}	C_{75}	D_{02}	D_{02}
C_{82}	C_{81}	C_{70}	C_{82}	C_{76}	C_{70}	C_{69}	C_{81}	C_{75}	C_{75}	C_{69}	C_{81}	C_{70}	C_{82}	C_{76}	D_{02}	D_{02}
C_{83}	C_{84}	C_{71}	C_{83}	C_{77}	C_{71}	C_{72}	C_{84}	C_{78}	C_{78}	C_{72}	C_{84}	C_{71}	C_{83}	C_{77}	D_{02}	D_{02}
C_{84}	C_{83}	C_{72}	C_{84}	C_{78}	C_{72}	C_{71}	C_{83}	C_{77}	C_{77}	C_{71}	C_{83}	C_{72}	C_{84}	C_{78}	D_{02}	D_{02}
D_{01}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{04}	D_{02}	D_{03}	D_{03}	D_{04}	D_{02}	D_{04}	D_{02}	D_{03}	D_{03}	D_{04}
D_{02}	D_{02}	D_{04}	D_{02}	D_{03}	D_{02}	D_{03}	D_{04}	D_{04}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{03}
D_{03}	D_{04}	D_{02}	D_{03}	D_{02}	D_{02}	D_{03}	D_{04}	D_{04}	D_{04}	D_{03}	D_{04}	D_{02}	D_{03}	D_{02}	D_{02}	D_{02}
D_{04}	D_{03}	D_{03}	D_{04}	D_{04}	D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	D_{02}	D_{02}

	B'_{06}	B'_{07}	B'_{08}	B'_{09}	B'_{10}	B'_{11}	B'_{12}	B'_{13}	B'_{14}	B'_{15}	B'_{16}	B'_{17}	B'_{18}	B'_{19}	B'_{20}	B'_{21}
C_{73}	C_{80}	C_{67}	C_{79}	C_{73}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{67}	C_{68}	C_{55}	C_{56}	C_{49}	C_{50}
C_{74}	C_{79}	C_{68}	C_{80}	C_{74}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{68}	C_{67}	C_{56}	C_{55}	C_{50}	C_{49}
C_{75}	C_{82}	C_{69}	C_{81}	C_{75}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{69}	C_{70}	C_{57}	C_{58}	C_{51}	C_{52}
C_{76}	C_{81}	C_{70}	C_{82}	C_{76}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{70}	C_{69}	C_{58}	C_{57}	C_{52}	C_{51}
C_{77}	C_{84}	C_{71}	C_{83}	C_{77}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{71}	C_{72}	C_{59}	C_{60}	C_{53}	C_{54}
C_{78}	C_{83}	C_{72}	C_{84}	C_{78}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{72}	C_{71}	C_{60}	C_{59}	C_{54}	C_{53}
C_{79}	D_{03}	D_{03}	D_{04}	D_{04}	C_{67}	C_{68}	C_{55}	C_{56}	C_{49}	C_{50}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}
C_{80}	D_{03}	D_{03}	D_{04}	D_{04}	C_{68}	C_{67}	C_{56}	C_{55}	C_{50}	C_{49}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}
C_{81}	D_{03}	D_{03}	D_{04}	D_{04}	C_{69}	C_{70}	C_{57}	C_{58}	C_{51}	C_{52}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}
C_{82}	D_{03}	D_{03}	D_{04}	D_{04}	C_{70}	C_{69}	C_{58}	C_{57}	C_{52}	C_{51}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}
C_{83}	D_{03}	D_{03}	D_{04}	D_{04}	C_{71}	C_{72}	C_{59}	C_{60}	C_{53}	C_{54}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}
C_{84}	D_{03}	D_{03}	D_{04}	D_{04}	C_{72}	C_{71}	C_{60}	C_{59}	C_{54}	C_{53}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}
D_{01}	D_{02}	D_{04}	D_{02}	D_{03}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
D_{02}	D_{04}	D_{02}	D_{03}	D_{02}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}
D_{03}	D_{03}	D_{03}	D_{04}	D_{04}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}
D_{04}	D_{03}	D_{03}	D_{04}	D_{04}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{22}	B'_{23}	B'_{24}	B'_{25}	B'_{26}	B'_{27}	B'_{28}	B'_{29}	B'_{30}	B'_{31}	B'_{32}	B'_{33}	B'_{34}	B'_{35}	B'_{36}	B'_{37}
C_{73}	C_{50}	C_{56}	C_{49}	C_{68}	C_{55}	C_{67}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	D_{01}	D_{01}	D_{02}	D_{02}
C_{74}	C_{49}	C_{55}	C_{50}	C_{67}	C_{56}	C_{68}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	D_{01}	D_{01}	D_{02}	D_{02}
C_{75}	C_{52}	C_{58}	C_{51}	C_{70}	C_{57}	C_{69}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	D_{01}	D_{01}	D_{02}	D_{02}
C_{76}	C_{51}	C_{57}	C_{52}	C_{69}	C_{58}	C_{70}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	D_{01}	D_{01}	D_{02}	D_{02}
C_{77}	C_{54}	C_{60}	C_{53}	C_{72}	C_{59}	C_{71}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	D_{01}	D_{01}	D_{02}	D_{02}
C_{78}	C_{53}	C_{59}	C_{54}	C_{71}	C_{60}	C_{72}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	D_{01}	D_{01}	D_{02}	D_{02}
C_{79}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{56}	C_{50}	C_{68}	C_{49}
C_{80}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{55}	C_{49}	C_{67}	C_{50}
C_{81}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{58}	C_{52}	C_{70}	C_{51}
C_{82}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{57}	C_{51}	C_{69}	C_{52}
C_{83}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{60}	C_{54}	C_{72}	C_{53}
C_{84}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{59}	C_{53}	C_{71}	C_{54}
D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}	D_{02}	D_{03}	D_{01}	D_{03}
D_{02}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{01}	D_{01}	D_{02}	D_{02}
D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}
D_{04}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	B'_{38}	B'_{39}	B'_{40}	B'_{41}	B'_{42}	B'_{43}	B'_{44}	B'_{45}	C_{01}	C_{02}	C_{03}	C_{04}	C_{05}	C_{06}	C_{07}	C_{08}
C_{73}	D_{03}	D_{03}	C_{56}	C_{50}	C_{68}	C_{49}	C_{67}	C_{55}	C_{61}	C_{73}	C_{79}	D_{01}	C_{62}	D_{01}	C_{62}	D_{04}
C_{74}	D_{03}	D_{03}	C_{55}	C_{49}	C_{67}	C_{50}	C_{68}	C_{56}	C_{62}	C_{74}	C_{80}	D_{01}	C_{61}	D_{01}	C_{61}	D_{04}
C_{75}	D_{03}	D_{03}	C_{58}	C_{52}	C_{70}	C_{51}	C_{69}	C_{57}	C_{63}	C_{75}	C_{81}	D_{01}	C_{64}	D_{01}	C_{64}	D_{04}
C_{76}	D_{03}	D_{03}	C_{57}	C_{51}	C_{69}	C_{52}	C_{70}	C_{58}	C_{64}	C_{76}	C_{82}	D_{01}	C_{63}	D_{01}	C_{63}	D_{04}
C_{77}	D_{03}	D_{03}	C_{60}	C_{54}	C_{72}	C_{53}	C_{71}	C_{59}	C_{65}	C_{77}	C_{83}	D_{01}	C_{66}	D_{01}	C_{66}	D_{04}
C_{78}	D_{03}	D_{03}	C_{59}	C_{53}	C_{71}	C_{54}	C_{72}	C_{60}	C_{66}	C_{78}	C_{84}	D_{01}	C_{65}	D_{01}	C_{65}	D_{04}
C_{79}	C_{67}	C_{55}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{61}	C_{73}	C_{79}	C_{62}	D_{01}	D_{01}	C_{62}	C_{61}
C_{80}	C_{68}	C_{56}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{62}	C_{74}	C_{80}	C_{61}	D_{01}	D_{01}	C_{61}	C_{62}
C_{81}	C_{69}	C_{57}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{63}	C_{75}	C_{81}	C_{64}	D_{01}	D_{01}	C_{64}	C_{63}
C_{82}	C_{70}	C_{58}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{64}	C_{76}	C_{82}	C_{63}	D_{01}	D_{01}	C_{63}	C_{64}
C_{83}	C_{71}	C_{59}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{65}	C_{77}	C_{83}	C_{66}	D_{01}	D_{01}	C_{66}	C_{65}
C_{84}	C_{72}	C_{60}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	C_{66}	C_{78}	C_{84}	C_{65}	D_{01}	D_{01}	C_{65}	C_{66}
D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{02}	D_{01}	D_{02}	D_{03}	D_{01}	D_{01}	D_{04}	D_{04}	D_{04}
D_{02}	D_{03}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{03}	D_{01}	D_{04}	D_{01}	D_{04}	D_{04}
D_{03}	D_{02}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}	D_{01}	D_{01}	D_{04}	D_{01}
D_{04}	D_{03}	D_{03}	D_{01}	D_{01}	D_{02}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{01}	D_{01}	D_{01}	D_{01}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{09}	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}	C_{18}	C_{19}	C_{20}	C_{21}	C_{22}	C_{23}	C_{24}
C_{73}	C_{61}	D_{04}	D_{02}	C_{74}	D_{02}	C_{74}	D_{04}	C_{73}	D_{04}	D_{03}	C_{80}	D_{03}	C_{80}	D_{04}	C_{79}	D_{04}
C_{74}	C_{62}	D_{04}	D_{02}	C_{73}	D_{02}	C_{73}	D_{04}	C_{74}	D_{04}	D_{03}	C_{79}	D_{03}	C_{79}	D_{04}	C_{80}	D_{04}
C_{75}	C_{63}	D_{04}	D_{02}	C_{76}	D_{02}	C_{76}	D_{04}	C_{75}	D_{04}	D_{03}	C_{82}	D_{03}	C_{82}	D_{04}	C_{81}	D_{04}
C_{76}	C_{64}	D_{04}	D_{02}	C_{75}	D_{02}	C_{75}	D_{04}	C_{76}	D_{04}	D_{03}	C_{81}	D_{03}	C_{81}	D_{04}	C_{82}	D_{04}
C_{77}	C_{65}	D_{04}	D_{02}	C_{78}	D_{02}	C_{78}	D_{04}	C_{77}	D_{04}	D_{03}	C_{84}	D_{03}	C_{84}	D_{04}	C_{83}	D_{04}
C_{78}	C_{66}	D_{04}	D_{02}	C_{77}	D_{02}	C_{77}	D_{04}	C_{78}	D_{04}	D_{03}	C_{83}	D_{03}	C_{83}	D_{04}	C_{84}	D_{04}
C_{79}	D_{04}	D_{04}	C_{74}	D_{02}	D_{02}	C_{74}	C_{73}	D_{04}	D_{04}	C_{80}	D_{03}	D_{03}	C_{80}	C_{79}	D_{04}	D_{04}
C_{80}	D_{04}	D_{04}	C_{73}	D_{02}	D_{02}	C_{73}	C_{74}	D_{04}	D_{04}	C_{79}	D_{03}	D_{03}	C_{79}	C_{80}	D_{04}	D_{04}
C_{81}	D_{04}	D_{04}	C_{76}	D_{02}	D_{02}	C_{76}	C_{75}	D_{04}	D_{04}	C_{82}	D_{03}	D_{03}	C_{82}	C_{81}	D_{04}	D_{04}
C_{82}	D_{04}	D_{04}	C_{75}	D_{02}	D_{02}	C_{75}	C_{76}	D_{04}	D_{04}	C_{81}	D_{03}	D_{03}	C_{81}	C_{82}	D_{04}	D_{04}
C_{83}	D_{04}	D_{04}	C_{78}	D_{02}	D_{02}	C_{78}	C_{77}	D_{04}	D_{04}	C_{84}	D_{03}	D_{03}	C_{84}	C_{83}	D_{04}	D_{04}
C_{84}	D_{04}	D_{04}	C_{77}	D_{02}	D_{02}	C_{77}	C_{78}	D_{04}	D_{04}	C_{83}	D_{03}	D_{03}	C_{83}	C_{84}	D_{04}	D_{04}
D_{01}	D_{04}	D_{01}	D_{02}	D_{02}	D_{04}	D_{04}	D_{04}	D_{04}	D_{02}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{04}	D_{03}
D_{02}	D_{01}	D_{04}	D_{02}	D_{04}	D_{02}	D_{04}	D_{04}	D_{02}	D_{04}	D_{03}	D_{04}	D_{03}	D_{04}	D_{04}	D_{03}	D_{04}
D_{03}	D_{04}	D_{04}	D_{04}	D_{02}	D_{02}	D_{04}	D_{02}	D_{04}	D_{04}	D_{04}	D_{03}	D_{03}	D_{04}	D_{03}	D_{04}	D_{04}
D_{04}	D_{04}	D_{04}	D_{03}	D_{03}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}	D_{03}	D_{03}	D_{03}	D_{03}	D_{04}	D_{04}	D_{04}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{25}	C_{26}	C_{27}	C_{28}	C_{29}	C_{30}	C_{31}	C_{32}	C_{33}	C_{34}	C_{35}	C_{36}	C_{37}	C_{38}	C_{39}	C_{40}
C_{73}	C_{49}	D_{01}	C_{50}	D_{01}	C_{50}	D_{02}	C_{49}	D_{02}	C_{55}	D_{01}	C_{56}	D_{01}	C_{56}	D_{03}	C_{55}	D_{03}
C_{74}	C_{50}	D_{01}	C_{49}	D_{01}	C_{49}	D_{02}	C_{50}	D_{02}	C_{56}	D_{01}	C_{55}	D_{01}	C_{55}	D_{03}	C_{56}	D_{03}
C_{75}	C_{51}	D_{01}	C_{52}	D_{01}	C_{52}	D_{02}	C_{51}	D_{02}	C_{57}	D_{01}	C_{58}	D_{01}	C_{58}	D_{03}	C_{57}	D_{03}
C_{76}	C_{52}	D_{01}	C_{51}	D_{01}	C_{51}	D_{02}	C_{52}	D_{02}	C_{58}	D_{01}	C_{57}	D_{01}	C_{57}	D_{03}	C_{58}	D_{03}
C_{77}	C_{53}	D_{01}	C_{54}	D_{01}	C_{54}	D_{02}	C_{53}	D_{02}	C_{59}	D_{01}	C_{60}	D_{01}	C_{60}	D_{03}	C_{59}	D_{03}
C_{78}	C_{54}	D_{01}	C_{53}	D_{01}	C_{53}	D_{02}	C_{54}	D_{02}	C_{60}	D_{01}	C_{59}	D_{01}	C_{59}	D_{03}	C_{60}	D_{03}
C_{79}	C_{49}	C_{50}	D_{01}	D_{01}	C_{50}	C_{49}	D_{02}	D_{02}	C_{55}	C_{56}	D_{01}	D_{01}	C_{56}	C_{55}	D_{03}	D_{03}
C_{80}	C_{50}	C_{49}	D_{01}	D_{01}	C_{49}	C_{50}	D_{02}	D_{02}	C_{56}	C_{55}	D_{01}	D_{01}	C_{55}	C_{56}	D_{03}	D_{03}
C_{81}	C_{51}	C_{52}	D_{01}	D_{01}	C_{52}	C_{51}	D_{02}	D_{02}	C_{57}	C_{58}	D_{01}	D_{01}	C_{58}	C_{57}	D_{03}	D_{03}
C_{82}	C_{52}	C_{51}	D_{01}	D_{01}	C_{51}	C_{52}	D_{02}	D_{02}	C_{58}	C_{57}	D_{01}	D_{01}	C_{57}	C_{58}	D_{03}	D_{03}
C_{83}	C_{53}	C_{54}	D_{01}	D_{01}	C_{54}	C_{53}	D_{02}	D_{02}	C_{59}	C_{60}	D_{01}	D_{01}	C_{60}	C_{59}	D_{03}	D_{03}
C_{84}	C_{54}	C_{53}	D_{01}	D_{01}	C_{53}	C_{54}	D_{02}	D_{02}	C_{60}	C_{59}	D_{01}	D_{01}	C_{59}	C_{60}	D_{03}	D_{03}
D_{01}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{02}	D_{02}	D_{01}	D_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{03}	D_{03}	D_{01}
D_{02}	D_{01}	D_{01}	D_{02}	D_{01}	D_{02}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{03}	D_{01}	D_{03}	D_{03}	D_{01}	D_{03}
D_{03}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{01}	D_{02}	D_{02}	D_{01}	D_{03}	D_{01}	D_{01}	D_{03}	D_{01}	D_{03}	D_{03}
D_{04}	D_{02}	D_{01}	D_{01}	D_{01}	D_{01}	D_{02}	D_{02}	D_{02}	D_{03}	D_{01}	D_{01}	D_{01}	D_{01}	D_{03}	D_{03}	D_{03}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{41}	C_{42}	C_{43}	C_{44}	C_{45}	C_{46}	C_{47}	C_{48}	C_{49}	C_{50}	C_{51}	C_{52}	C_{53}	C_{54}	C_{55}	C_{56}
C_{73}	C_{67}	D_{02}	C_{68}	D_{02}	C_{68}	D_{03}	C_{67}	D_{03}	C_{49}	C_{50}	D_{02}	D_{01}	C_{50}	C_{49}	C_{55}	C_{56}
C_{74}	C_{68}	D_{02}	C_{67}	D_{02}	C_{67}	D_{03}	C_{68}	D_{03}	C_{50}	C_{49}	D_{02}	D_{01}	C_{49}	C_{50}	C_{56}	C_{55}
C_{75}	C_{69}	D_{02}	C_{70}	D_{02}	C_{70}	D_{03}	C_{69}	D_{03}	C_{51}	C_{52}	D_{02}	D_{01}	C_{52}	C_{51}	C_{57}	C_{58}
C_{76}	C_{70}	D_{02}	C_{69}	D_{02}	C_{69}	D_{03}	C_{70}	D_{03}	C_{52}	C_{51}	D_{02}	D_{01}	C_{51}	C_{52}	C_{58}	C_{57}
C_{77}	C_{71}	D_{02}	C_{72}	D_{02}	C_{72}	D_{03}	C_{71}	D_{03}	C_{53}	C_{54}	D_{02}	D_{01}	C_{54}	C_{53}	C_{59}	C_{60}
C_{78}	C_{72}	D_{02}	C_{71}	D_{02}	C_{71}	D_{03}	C_{72}	D_{03}	C_{54}	C_{53}	D_{02}	D_{01}	C_{53}	C_{54}	C_{60}	C_{59}
C_{79}	C_{67}	C_{68}	D_{02}	D_{02}	C_{68}	C_{67}	D_{03}	D_{03}	D_{02}	D_{01}	C_{49}	C_{50}	C_{50}	C_{49}	D_{03}	D_{01}
C_{80}	C_{68}	C_{67}	D_{02}	D_{02}	C_{67}	C_{68}	D_{03}	D_{03}	D_{02}	D_{01}	C_{50}	C_{49}	C_{49}	C_{50}	D_{03}	D_{01}
C_{81}	C_{69}	C_{70}	D_{02}	D_{02}	C_{70}	C_{69}	D_{03}	D_{03}	D_{02}	D_{01}	C_{51}	C_{52}	C_{52}	C_{51}	D_{03}	D_{01}
C_{82}	C_{70}	C_{69}	D_{02}	D_{02}	C_{69}	C_{70}	D_{03}	D_{03}	D_{02}	D_{01}	C_{52}	C_{51}	C_{51}	C_{52}	D_{03}	D_{01}
C_{83}	C_{71}	C_{72}	D_{02}	D_{02}	C_{72}	C_{71}	D_{03}	D_{03}	D_{02}	D_{01}	C_{53}	C_{54}	C_{54}	C_{53}	D_{03}	D_{01}
C_{84}	C_{72}	C_{71}	D_{02}	D_{02}	C_{71}	C_{72}	D_{03}	D_{03}	D_{02}	D_{01}	C_{54}	C_{53}	C_{53}	C_{54}	D_{03}	D_{01}
D_{01}	D_{02}	D_{02}	D_{02}	D_{03}	D_{03}	D_{03}	D_{03}	D_{02}	D_{01}	D_{02}	D_{01}	D_{02}	D_{01}	D_{02}	D_{01}	D_{03}
D_{02}	D_{02}	D_{02}	D_{03}	D_{02}	D_{03}	D_{03}	D_{02}	D_{03}	D_{01}	D_{02}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{03}
D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{03}	D_{02}	D_{03}	D_{03}	D_{02}	D_{01}	D_{01}	D_{02}	D_{02}	D_{01}	D_{03}	D_{01}
D_{04}	D_{03}	D_{02}	D_{02}	D_{02}	D_{02}	D_{03}	D_{03}	D_{03}	D_{02}	D_{01}	D_{02}	D_{01}	D_{01}	D_{02}	D_{03}	D_{01}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{57}	C_{58}	C_{59}	C_{60}	C_{61}	C_{62}	C_{63}	C_{64}	C_{65}	C_{66}	C_{67}	C_{68}	C_{69}	C_{70}	C_{71}	C_{72}
C_{73}	D_{03}	D_{01}	C_{56}	C_{55}	C_{61}	C_{62}	D_{04}	D_{01}	C_{62}	C_{61}	C_{67}	C_{68}	D_{03}	D_{02}	C_{68}	C_{67}
C_{74}	D_{03}	D_{01}	C_{55}	C_{56}	C_{62}	C_{61}	D_{04}	D_{01}	C_{61}	C_{62}	C_{68}	C_{67}	D_{03}	D_{02}	C_{67}	C_{68}
C_{75}	D_{03}	D_{01}	C_{58}	C_{57}	C_{63}	C_{64}	D_{04}	D_{01}	C_{64}	C_{63}	C_{69}	C_{70}	D_{03}	D_{02}	C_{70}	C_{69}
C_{76}	D_{03}	D_{01}	C_{57}	C_{58}	C_{64}	C_{63}	D_{04}	D_{01}	C_{63}	C_{64}	C_{70}	C_{69}	D_{03}	D_{02}	C_{69}	C_{70}
C_{77}	D_{03}	D_{01}	C_{60}	C_{59}	C_{65}	C_{66}	D_{04}	D_{01}	C_{66}	C_{65}	C_{71}	C_{72}	D_{03}	D_{02}	C_{72}	C_{71}
C_{78}	D_{03}	D_{01}	C_{59}	C_{60}	C_{66}	C_{65}	D_{04}	D_{01}	C_{65}	C_{66}	C_{72}	C_{71}	D_{03}	D_{02}	C_{71}	C_{72}
C_{79}	C_{55}	C_{56}	C_{56}	C_{55}	D_{04}	D_{01}	C_{61}	C_{62}	C_{62}	C_{61}	D_{03}	D_{02}	C_{67}	C_{68}	C_{68}	C_{67}
C_{80}	C_{56}	C_{55}	C_{55}	C_{56}	D_{04}	D_{01}	C_{62}	C_{61}	C_{61}	C_{62}	D_{03}	D_{02}	C_{68}	C_{67}	C_{67}	C_{68}
C_{81}	C_{57}	C_{58}	C_{58}	C_{57}	D_{04}	D_{01}	C_{63}	C_{64}	C_{64}	C_{63}	D_{03}	D_{02}	C_{69}	C_{70}	C_{70}	C_{69}
C_{82}	C_{58}	C_{57}	C_{57}	C_{58}	D_{04}	D_{01}	C_{64}	C_{63}	C_{63}	C_{64}	D_{03}	D_{02}	C_{70}	C_{69}	C_{69}	C_{70}
C_{83}	C_{59}	C_{60}	C_{60}	C_{59}	D_{04}	D_{01}	C_{65}	C_{66}	C_{66}	C_{65}	D_{03}	D_{02}	C_{71}	C_{72}	C_{72}	C_{71}
C_{84}	C_{60}	C_{59}	C_{59}	C_{60}	D_{04}	D_{01}	C_{66}	C_{65}	C_{65}	C_{66}	D_{03}	D_{02}	C_{72}	C_{71}	C_{71}	C_{72}
D_{01}	D_{01}	D_{03}	D_{01}	D_{03}	D_{01}	D_{04}	D_{01}	D_{04}	D_{01}	D_{04}	D_{02}	D_{03}	D_{02}	D_{03}	D_{02}	D_{03}
D_{02}	D_{03}	D_{01}	D_{03}	D_{01}	D_{01}	D_{04}	D_{04}	D_{01}	D_{04}	D_{01}	D_{02}	D_{03}	D_{03}	D_{02}	D_{03}	D_{02}
D_{03}	D_{01}	D_{03}	D_{03}	D_{01}	D_{04}	D_{01}	D_{01}	D_{04}	D_{04}	D_{01}	D_{03}	D_{02}	D_{02}	D_{03}	D_{03}	D_{02}
D_{04}	D_{03}	D_{01}	D_{01}	D_{03}	D_{04}	D_{01}	D_{04}	D_{01}	D_{01}	D_{04}	D_{03}	D_{02}	D_{03}	D_{02}	D_{02}	D_{03}

THE TRANSFORMATION SEMIGROUP OF DEGREE FOUR (continued)

	C_{73}	C_{74}	C_{75}	C_{76}	C_{77}	C_{78}	C_{79}	C_{80}	C_{81}	C_{82}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
C_{73}	C_{73}	C_{74}	D_{04}	D_{02}	C_{74}	C_{73}	C_{79}	C_{80}	D_{04}	D_{03}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
C_{74}	C_{74}	C_{73}	D_{04}	D_{02}	C_{73}	C_{74}	C_{80}	C_{79}	D_{04}	D_{03}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
C_{75}	C_{75}	C_{76}	D_{04}	D_{02}	C_{76}	C_{75}	C_{81}	C_{82}	D_{04}	D_{03}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
C_{76}	C_{76}	C_{75}	D_{04}	D_{02}	C_{75}	C_{76}	C_{82}	C_{81}	D_{04}	D_{03}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
C_{77}	C_{77}	C_{78}	D_{04}	D_{02}	C_{78}	C_{77}	C_{83}	C_{84}	D_{04}	D_{03}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
C_{78}	C_{78}	C_{77}	D_{04}	D_{02}	C_{77}	C_{78}	C_{84}	C_{83}	D_{04}	D_{03}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
C_{79}	D_{04}	D_{02}	C_{73}	C_{74}	C_{74}	C_{73}	D_{04}	D_{03}	C_{79}	C_{80}	C_{80}	C_{79}	D_{01}	D_{02}	D_{03}	D_{04}
C_{80}	D_{04}	D_{02}	C_{74}	C_{73}	C_{73}	C_{74}	D_{04}	D_{03}	C_{80}	C_{79}	C_{79}	C_{80}	D_{01}	D_{02}	D_{03}	D_{04}
C_{81}	D_{04}	D_{02}	C_{75}	C_{76}	C_{76}	C_{75}	D_{04}	D_{03}	C_{81}	C_{82}	C_{82}	C_{81}	D_{01}	D_{02}	D_{03}	D_{04}
C_{82}	D_{04}	D_{02}	C_{76}	C_{75}	C_{75}	C_{76}	D_{04}	D_{03}	C_{82}	C_{81}	C_{81}	C_{82}	D_{01}	D_{02}	D_{03}	D_{04}
C_{83}	D_{04}	D_{02}	C_{77}	C_{78}	C_{78}	C_{77}	D_{04}	D_{03}	C_{83}	C_{84}	C_{84}	C_{83}	D_{01}	D_{02}	D_{03}	D_{04}
C_{84}	D_{04}	D_{02}	C_{78}	C_{77}	C_{77}	C_{78}	D_{04}	D_{03}	C_{84}	C_{83}	C_{83}	C_{84}	D_{01}	D_{02}	D_{03}	D_{04}
D_{01}	D_{02}	D_{04}	D_{02}	D_{04}	D_{02}	D_{04}	D_{03}	D_{04}	D_{03}	D_{04}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}
D_{02}	D_{02}	D_{04}	D_{04}	D_{02}	D_{04}	D_{02}	D_{03}	D_{04}	D_{04}	D_{03}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
D_{03}	D_{04}	D_{02}	D_{02}	D_{04}	D_{04}	D_{02}	D_{04}	D_{03}	D_{03}	D_{04}	D_{04}	D_{03}	D_{01}	D_{02}	D_{03}	D_{04}
D_{04}	D_{04}	D_{02}	D_{04}	D_{02}	D_{02}	D_{04}	D_{04}	D_{03}	D_{04}	D_{03}	D_{03}	D_{04}	D_{01}	D_{02}	D_{03}	D_{04}

We now list the semigroups of endomorphisms, of right translations, and of left translations of semigroups of orders two, three, and four. For semigroups of order four the endomorphisms are given only for the commutative semigroups. We recall that for commutative semigroups any right translation is a left translation. The following abbreviations are used: Endo., R. Trans., L. Trans., for endomorphisms, right translations, and left translations respectively.

Semigroup 2.1

   Endo.: A_{01}, B_{08}

   Trans.: A_{01}, A_{03}

Semigroup 2.3

   Endo.: A_{01}, A_{03}, B_{08}, B_{14}

   R. Trans.: A_{01}

   L. Trans.: A_{01}, A_{03}, B_{08}, B_{14}

Semigroup 3.1

   Endo.: A_{01}, C_{01}

   Trans.: A_{01}, B_{01}, B_{05}

Semigroup 3.3

   Endo.: A_{01}, A_{02}, C_{01}

   Trans.: A_{01}, A_{04}, A_{05}

Semigroup 3.5

   Endo.: A_{01}, B_{02}, C_{01}, C_{02}

   Trans.: A_{01}, B_{08}, B_{12}

Semigroup 3.7

   Endo.: A_{01}, B_{02}, C_{01}, C_{02}

   R. Trans.: A_{01}, C_{01}

   L. Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}

Semigroup 2.2

   Endo.: A_{01}, B_{08}, B_{14}

   Trans.: A_{01}, B_{08}

Semigroup 2.4

   Endo.: A_{01}, B_{08}

   Trans.: A_{01}, B_{08}

Semigroup 3.2

   Endo.: A_{01}, B_{03}, C_{01}

   Trans.: A_{01}, B_{03}, C_{01}

Semigroup 3.4

   Endo.: A_{01}, C_{01}

   Trans.: A_{01}, B_{08}

Semigroup 3.6

   Endo.: A_{01}, B_{02}, B_{08}, C_{01}, C_{03}

   Trans.: A_{01}, B_{02}, B_{08}, C_{01}

Semigroup 3.8

Endo.: A_{01}, B_{08}, C_{01}, C_{03}

Trans.: A_{01}, B_{03}, C_{01}

Semigroup 3.9

Endo.: A_{01}, B_{02}, B_{06}, B_{08}, C_{01}, C_{02}

R. Trans.: A_{01}, B_{01}, B_{02}

L. Trans.: A_{01}, B_{02}, B_{06}, $_{08}$, C_{01}, C_{02}

Semigroup 3.10   Semigroup 3.11

Endo.: A_{01}, B_{08}, C_{01}, C_{03} Endo.: A_{01}, B_{08}, C_{01}, C_{03}

Trans.: A_{01}, B_{08}, C_{03} Trans.: A_{01}, A_{03}, C_{03}

Semigroup 3.12

Endo.: A_{01}, B_{02}, B_{06}, B_{08}, C_{01}, C_{02}, C_{03}

R. Trans.: A_{01}, B_{01}

L. Trans.: A_{01}, B_{02}, B_{06}, B_{08}, C_{01}, C_{02}

Semigroup 3.13

Endo.: A_{01}, A_{03}, B_{08}, B_{14}, C_{01}, C_{02}, C_{03}

R. Trans.: A_{01}, B_{01}, B_{02}

L. Trans.: A_{01}, C_{01}, C_{02}

Semigroup 3.14

Endo.: The transformation semigroup of degree three.

R. Trans.: A_{01}

L. Trans.: The transformation semigroup of degree three.

Semigroup 3.15

Endo.: A_{01}, A_{03}, B_{08}, B_{14}, C_{01}, C_{02}, C_{03}

R. Trans.: A_{01}, C_{03}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, C_{03}

Semigroup 3.16

   Endo.: A_{01}, B_{01}, B_{03}, B_{07}, B_{08}, B_{14}, B_{17}, C_{01}, C_{02}, C_{03}

   Trans.: A_{01}, B_{01}, C_{01}

Semigroup 3.17

   Endo.: A_{01}, A_{02}, B_{02}, B_{03}, B_{08}, B_{09}, C_{01}, C_{02}, C_{03}

   Trans.: A_{01}, B_{02}, C_{01}

Semigroup 3.18

   Endo.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}

   Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}

Semigroup 4.1

   Endo.: A_{01}, B_{08}, B_{07}, B_{14}, B_{17}, B_{44}, C_{03}, C_{32}, C_{40}, C_{48}, C_{49}, C_{55}, C_{67}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, B_{44}, C_{32}, D_{01}

Semigroup 4.2

   Endo.: A_{01}, A_{07}, B_{02}, B_{08}, B_{27}, B_{47}, B_{55}, B_{16}, B_{22}, B_{43}, C_{01}, C_{04}, C_{27}, C_{33}, C_{34}, C_{55}, C_{61}, D_{01}, D_{02}

   Trans.: A_{01}, A_{07}, B_{02}, B_{08}, B_{27}, B_{47}, B_{16}, B_{22}, B_{44}, C_{01}, C_{04}, C_{27}, C_{33}, C_{34}, C_{55}, C_{61}, D_{01}

Semigroup 4.3

   Endo.: A_{01}, A_{07}, B_{47}, B_{44}, C_{25}, C_{26}, C_{49}, D_{01}

   Trans.: A_{01}, A_{07}, B_{47}, B_{44}, C_{25}, C_{26}, C_{49}, D_{01}

Semigroup 4.4

   Endo.: A_{01}, B_{02}, B_{22}, C_{04}, C_{27}, C_{34}, D_{01}, D_{02}

   Trans.: A_{01}, B_{02}, B_{58}, C_{05}, C_{34}, D_{01}

Semigroup 4.5

    Endo.: A_{01}, B_{02}, B_{08}, B_{71}, B_{11}', B_{36}', C_{01}, C_{02}, C_{25}, C_{34}, C_{51}, C_{63}, C_{75}, D_{01}, D_{02}, D_{04}

    Trans.: A_{01}, B_{02}, B_{36}', C_{34}, C_{51}, D_{01}

Semigroup 4.6

    Endo.: A_{01}, B_{08}, B_{16}', C_{27}, C_{33}, D_{01}, D_{02}

    Trans.: A_{01}, B_{08}, B_{16}', C_{25}, C_{27}, C_{33}, C_{51}, D_{01}

Semigroup 4.7

    Endo.: A_{01}, B_{10}', B_{11}', C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, D_{01}

    Trans.: A_{01}, B_{44}', C_{25}, C_{26}, C_{49}, D_{01}

Semigroup 4.8

    Endo.: A_{01}, C_{25}, C_{33}, D_{01}

    Trans.: A_{01}, B_{17}', C_{33}, D_{01}

Semigroup 4.9

    Endo.: A_{01}, B_{02}, B_{36}', C_{02}, C_{11}, C_{33}, C_{34}, C_{51}, C_{55}, C_{73}, D_{01}, D_{02}

    Trans.: A_{01}, B_{02}, B_{36}', C_{33}, C_{34}, C_{51}, C_{55}, D_{01}

Semigroup 4.10

    Endo.: A_{01}, A_{07}, C_{49}, C_{51}, D_{01}

    Trans.: A_{01}, A_{11}, A_{18}, A_{22}

Semigroup 4.11

    Endo.: A_{01}, A_{02}, A_{07}, A_{08}, A_{09}, A_{10}, C_{49}, C_{51}, C_{53}, C_{55}, C_{57}, C_{59}, C_{61}, C_{63}, C_{65}, D_{01}

    Trans.: A_{01}, A_{11}, A_{16}, A_{24}

Semigroup 4.12

    Endo.: A_{01}, A_{02}, C_{01}, D_{01}, D_{04}

    Trans.: A_{01}, A_{04}, A_{05}, D_{04}

Semigroup 4.13

    Endo.: A_{01}, A_{02}, $B_{22}^{\prime}$, $B_{23}^{\prime}$, C_{01}, D_{01}, D_{04}

    Trans.: A_{01}, $B_{22}^{\prime}$, $B_{25}^{\prime}$, $B_{26}^{\prime}$

Semigroup 4.14

    Endo.: A_{01}, B_{08}, $B_{44}^{\prime}$, C_{19}, C_{27}, C_{55}, D_{01}, D_{03}

    Trans.: A_{01}, A_{07}, C_{27}, C_{31}

Semigroup 4.15

    Endo.: A_{02}, C_{51}, C_{55}, C_{81}, D_{01}, D_{03}

    Trans.: A_{01}, A_{11}, C_{51}, C_{52}

Semigroup 4.16

    Endo.: A_{01}, A_{07}, B_{02}, B_{08}, B_{55}, $B_{22}^{\prime}$, C_{01}, C_{27}, C_{34}, D_{01}, D_{03}, D_{04}

    Trans.: A_{01}, B_{02}, $B_{22}^{\prime}$, C_{27}, C_{31}

Semigroup 4.17

    Endo.: A_{01}, B_{08}, B_{27}, B_{47}, $B_{22}^{\prime}$, $B_{44}^{\prime}$, C_{22}, C_{27}, C_{34}, C_{61}, C_{80}, D_{01}, D_{03}, D_{04}

    Trans.: A_{01}, B_{47}, C_{27}, C_{31}

Semigroup 4.18

    Endo.: A_{01}, B_{08}, $B_{22}^{\prime}$, C_{01}, C_{03}, C_{08}, C_{22}, C_{34}, C_{37}, D_{01}, D_{03}, D_{04}

    Trans.: A_{01}, $B_{22}^{\prime}$, $B_{23}^{\prime}$, D_{03}

Semigroup 4.19

    Endo.: A_{01}, B_{08}, B_{50}, $B_{44}^{\prime}$, C_{03}, C_{37}, C_{55}, D_{01}, D_{03}, D_{04}

    Trans.: A_{01}, A_{03}, $B_{44}^{\prime}$, $B_{45}^{\prime}$, C_{03}, D_{03}

Semigroup 4.20

    Endo.: A_{01}, B_{08}, B_{47}, $B_{44}^{\prime}$, C_{01}, C_{03}, C_{33}, C_{55}, C_{61}, C_{79}, D_{01}, D_{03}, D_{04}

    Trans.: A_{01}, A_{03}, C_{03}, D_{04}

Semigroup 4.21

   Endo.: A_{01}, B_{02}, B'_{22}, C_{01}, C_{27}, D_{01}, D_{02}

   Trans.: A_{01}, B_{09}, C_{01}, C_{07}

Semigroup 4.22

   Endo.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{27}, C_{34}, D_{01}, D_{02}

   Trans.: A_{01}, B_{02}, B_{07}, B_{08}, B_{09}, C_{01}, C_{07}, D_{04}

Semigroup 4.23

   Endo.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{02}, C_{09}, C_{16}, C_{27}, C_{29}, C_{34}, D_{01},

D_{02}, D_{04}

   Trans.: A_{01}, B_{02}, B_{08}, C_{01}, D_{04}

Semigroup 4.24

   Endo.: A_{01}, B'_{44}, C_{27}, C_{55}, D_{01}, D_{02}

   Trans.: A_{01}, B_{73}, C_{55}, C_{56}

Semigroup 4.25

   Endo.: A_{01}, B_{02}, B'_{22}, C_{27}, C_{34}, D_{01}, D_{02}

   Trans.: A_{01}, B_{02}, B_{26}, D_{02}

Semigroup 4.26

   Endo.: A_{01}, B_{47}, C_{27}, D_{01}, D_{02}

   Trans.: A_{01}, B_{44}, B_{47}, D_{02}

Semigroup 4.27

   Endo.: A_{01}, B_{02}, B'_{36}, C_{34}, C_{51}, D_{01}, D_{02}

   Trans.: A_{01}, A_{10}, B_{02}, B_{23}, C_{34}, D_{01}

Semigroup 4.28

   Endo.: A_{01}, B_{02}, B'_{36}, C_{51}, D_{01}, D_{02}

   Trans.: A_{01}, A_{10}, C_{57}, D_{01}

Semigroup 4.29

    Endo.: A_{01}, B_{02}, $B_{36}^{!}$, C_{02}, C_{34}, C_{51}, D_{01}, D_{02}

    Trans.: A_{01}, $B_{36}^{!}$, C_{34}, C_{38}, D_{03}

Semigroup 4.30

    Endo.: A_{01}, A_{07}, B_{02}, B_{08}, B_{27}, B_{47}, B_{55}, $B_{16}^{!}$, $B_{22}^{!}$, $B_{44}^{!}$, C_{01}, C_{04}, C_{27}, C_{33}, C_{34}, C_{55}, C_{61}, D_{01}

    Trans.: A_{01}, A_{07}, B_{02}, B_{27}, B_{47}, $B_{16}^{!}$, $B_{22}^{!}$, $B_{44}^{!}$, C_{27}, C_{31}

Semigroup 4.31

    Endo.: A_{01}, B_{02}, $B_{36}^{!}$, C_{33}, C_{34}, C_{51}, C_{55}, D_{01}

    Trans.: A_{01}, A_{11}, B_{02}, B_{37}, $B_{18}^{!}$, $B_{36}^{!}$, C_{51}, C_{52}

Semigroup 4.32

    Endo.: A_{01}, A_{07}, B_{01}, B_{39}, B_{47}, $B_{30}^{!}$, $B_{36}^{!}$, $B_{44}^{!}$, C_{32}, D_{01}

    Trans.: A_{01}, A_{07}, B_{01}, B_{39}, B_{47}, $B_{30}^{!}$, $B_{33}^{!}$, $B_{36}^{!}$, $B_{44}^{!}$, C_{28}, C_{32}

Semigroup 4.33

    Endo.: A_{01}, B_{02}, $B_{11}^{!}$, C_{25}, C_{34}, D_{01}

    Trans.: A_{01}, A_{10}, B_{10}, B_{58}, B_{71}, $B_{12}^{!}$, $B_{22}^{!}$, $B_{36}^{!}$, C_{34}, C_{38}

Semigroup 4.34

    Endo.: A_{01}, C_{25}, C_{55}, D_{01}

    Trans.: A_{01}, A_{16}, B_{08}, B_{73}, $B_{14}^{!}$, $B_{44}^{!}$, C_{55}, C_{56}

Semigroup 4.35

    Endo.: A_{01}, $B_{42}^{!}$, $B_{44}^{!}$, D_{01}

    Trans.: A_{01}, B_{46}, $B_{40}^{!}$, $B_{43}^{!}$, $B_{44}^{!}$

Semigroup 4.36

    Endo.: A_{01}, $B_{44}^{!}$, C_{01}, C_{27}, C_{33}, D_{01}, D_{02}

    Trans.: A_{01}, $B_{44}^{!}$, C_{05}, C_{35}, D_{01}

Semigroup 4.37

Endo.: A_{01}, A_{07}, B_{02}, B_{27}, B_{47}, $B_{16}^?$, $B_{22}^?$, $B_{44}^?$, C_{27}, D_{01}, D_{02}

Trans.: A_{01}, C_{05}, C_{35}, D_{01}

Semigroup 4.38

Endo.: A_{01}, B_{02}, $B_{36}^!$, C_{02}, C_{33}, C_{51}, D_{01}, D_{02}

Trans.: A_{01}, $B_{36}^!$, C_{57}, D_{01}

Semigroup 4.39

Endo.: A_{01}, $B_{16}^!$, C_{27}, D_{01}, D_{02}

Trans.: A_{01}, B_{53}, C_{35}, D_{01}

Semigroup 4.40

Endo.: A_{01}, A_{07}, B_{01}, B_{14}, B_{39}, B_{47}, B_{79}, $B_{30}^!$, $B_{36}^!$, $B_{44}^!$, C_{02}, C_{11}, C_{32}, C_{41}, C_{42}, C_{67}, C_{73}, D_{01}, D_{02}

Trans.: A_{01}, A_{07}, B_{01}, B_{39}, B_{47}, $B_{30}^!$, $B_{36}^!$, $B_{44}^!$, C_{32}, D_{01}

Semigroup 4.41

Endo.: A_{01}, B_{14}, $B_{30}^!$, C_{32}, C_{41}, D_{01}, D_{02}

Trans.: A_{01}, $B_{30}^!$, C_{32}, D_{01}

Semigroup 4.42

Endo.: A_{01}, B_{01}, B_{03}, B_{07}, B_{08}, B_{14}, B_{17}, B_{47}, B_{77}, $B_{08}^!$, $B_{10}^!$, $B_{30}^!$, $B_{44}^!$, C_{01}, C_{02}, C_{03}, C_{10}, C_{17}, C_{24}, C_{25}, C_{32}, C_{33}, C_{40}, C_{49}, C_{55}, C_{61}, C_{73}, C_{79}, D_{01}, D_{02}, D_{03}, D_{04}

Trans.: A_{01}, $B_{44}^!$, C_{32}, D_{01}

Semigroup 4.43

Endo.: A_{01}, B_{01}, B_{03}, B_{07}, B_{08}, B_{19}, B_{35}, B_{55}, B_{65}, $B_{22}^!$, C_{01}, C_{04}, C_{25}, C_{26}, C_{33}, C_{34}, C_{41}, C_{42}, C_{53}, C_{59}, C_{65}, C_{71}, D_{01}, D_{02}, D_{03}, D_{04}

Trans.: A_{01}, B_{01}, $B_{22}^!$, C_{01}, C_{53}, D_{01}

Semigroup 4.44

   Endo.: A_{01}, B_{08}, B'_{22}, C_{26}, C_{34}, C_{42}, C_{53}, C_{59}, C_{71}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, C_{04}, C_{53}, D_{01}

Semigroup 4.45

   Endo.: A_{01}, B_{01}, B_{07}, B'_{22}, C_{42}, C_{71}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, B_{01}, C_{65}, D_{01}

Semigroup 4.46

   Endo.: A_{01}, B_{01}, B_{14}, B'_{36}, C_{02}, C_{26}, C_{32}, C_{34}, C_{40}, C_{42}, C_{48}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, B_{01}, B'_{36}, C_{32}, D_{01}

Semigroup 4.47

   Endo.: A_{01}, B_{14}, B'_{36}, C_{26}, C_{32}, C_{34}, C_{40}, C_{42}, C_{48}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, B_{39}, C_{32}, D_{01}

Semigroup 4.48

   Endo.: A_{01}, A_{02}, A_{07}, A_{08}, A_{09}, A_{10}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, B_{19}, B_{23}, B_{27}, B_{28}, B_{35}, B_{39}, B_{41}, B_{45}, B_{47}, B_{53}, B_{55}, B_{57}, B_{58}, B_{65}, B_{69}, B_{71}, B_{75}, B_{77}, B'_{10}, B'_{11}, B'_{16}, B'_{17}, B'_{22}, B'_{23}, B'_{30}, B'_{32}, B'_{36}, B'_{38}, B'_{42}, B'_{44}, D_{01}, D_{02}, D_{03}, D_{04}

   Trans.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{27}, C_{34}, D_{01}

Semigroup 4.49

   Endo.: A_{01}, A_{02}, B_{02}, B_{03}, B_{08}, B_{09}, C_{01}, C_{02}, C_{04}, C_{25}, C_{33}, C_{49}, C_{51}, C_{55}, C_{57}, C_{61}, C_{63}, C_{73}, C_{75}, C_{79}, C_{81}, D_{01}, D_{02}, D_{03}, D_{04}

   Trans.: A_{01}, C_{51}, C_{55}, D_{01}

Semigroup 4.50

   Endo.: A_{01}, A_{02}, B_{02}, B_{03}, B_{08}, B_{09}, B'_{22}, B'_{23}, C_{01}, C_{26}, C_{27}, C_{34}, C_{35}, D_{01}, D_{02}, D_{03}

   Trans.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{27}, C_{34}, D_{01}

Semigroup 4.51

    Endo.: A_{01}, B_{08}, B'_{22}, B'_{23}, C_{26}, C_{27}, C_{34}, C_{35}, D_{01}, D_{02}, D_{03}

    Trans.: A_{01}, B_{08}, B_{27}, C_{04}, C_{27}, D_{01}

Semigroup 4.52

    Endo.: A_{01}, B_{02}, B'_{36}, B'_{38}, C_{26}, C_{34}, C_{51}, C_{57}, D_{01}, D_{02}, D_{03}

    Trans.: A_{01}, B_{02}, B'_{36}, C_{34}, C_{51}, C_{55}, D_{01}

Semigroup 4.53

    Endo.: A_{01}, A_{07}, B_{03}, B_{19}, B'_{10}, B'_{11}, C_{01}, C_{04}, C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, C_{61}, D_{01}

    Trans.: A_{01}, C_{25}, C_{26}, C_{49}, D_{01}

Semigroup 4.54

    Endo.: A_{01}, B_{01}, B_{02}, B'_{10}, B'_{11}, C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, D_{01}

    Trans.: A_{01}, B_{01}, B_{02}, B'_{10}, B'_{11}, C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, D_{01}

Semigroup 4.55

    Endo.: A_{01}, A_{02}, A_{07}, A_{08}, A_{09}, A_{10}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, B_{19}, B_{23}, B_{27}, B_{28}, B_{35}, B_{39}, B_{41}, B_{45}, B_{47}, B_{53}, B_{55}, B_{57}, B_{58}, B_{65}, B_{69}, B_{71}, B_{75}, B_{77}, B'_{10}, B'_{11}, B'_{16}, B'_{17}, B'_{22}, B'_{23}, B'_{30}, B'_{32}, B'_{36}, B'_{38}, B'_{42}, B'_{44}, C_{01}, C_{04}, C_{05}, C_{10}, C_{25}, C_{26}, C_{27}, C_{32}, C_{33}, C_{34}, C_{35}, C_{40}, C_{49}, C_{51}, C_{53}, C_{55}, C_{57}, C_{59}, C_{61}, C_{63}, C_{65}, D_{01}

    Trans.: Same as endomorphisms

Semigroup 4.56

    R. Trans.: A_{01}, B_{03}, B'_{22}, C_{01}, C_{07}, C_{26}, D_{01}, D_{04}

    L. Trans.: A_{01}, B_{03}, C_{01}, C_{61}

Semigroup 4.57

    R. Trans.: A_{01}, B'_{22}, B'_{23}, D_{01}, D_{04}

    L. Trans.: A_{01}, A_{02}, C_{01}

Semigroup 4.58

   R. Trans.: A_{01}, B_{08}, B'_{44}, C_{03}, C_{21}, C_{55}, D_{03}, D_{04}

   L. Trans.: A_{01}, B_{08}, C_{03}, C_{81}

Semigroup 4.59

   R. Trans.: A_{01}, B_{01}, B_{02}

   L. Trans.: A_{01}, B'_{22}, B'_{36}, C_{01}, C_{02}, C_{07}, C_{14}, C_{25}, C_{29}, D_{01}, D_{02}, D_{04}

Semigroup 4.60   Semigroup 4.61

   R. Trans.: A_{01}, A_{03}, D_{03}, D_{04} R. Trans.: A_{01}, B_{08}, D_{03}, D_{04}

   L. Trans.: A_{01}, A_{03}, C_{03}, C_{22} L. Trans.: A_{01}, B_{08}, C_{03}, C_{22}

Semigroup 4.62

   R. Trans.: A_{01}, B'_{22}, B'_{36}

   L. Trans.: A_{01}, B_{01}, B_{02}, C_{26}, C_{30}, C_{34}, C_{38}, C_{42}, C_{46}, D_{01}, D_{02}, D_{03}

Semigroup 4.63   Semigroup 4.64

   R. Trans.: A_{01}, A_{07}, C_{51}, C_{53} R. Trans.: A_{01}, A_{16}, C_{51}, C_{81}

   L. Trans.: A_{01}, A_{11}, D_{01}, D_{02} L. Trans.: A_{01}, A_{11}, C_{55}, C_{73}

Semigroup 4.65

   R. Trans.: A_{01}, A_{03}, A_{07}, A_{11}, A_{16}, A_{18}, A_{22}, A_{24}, C_{51}, C_{52}, C_{53},

   C_{54}, C_{81}, C_{82}, C_{83}, C_{84}

   L. Trans.: A_{01}, A_{11}

Semigroup 4.66

   R. Trans.: A_{01}, C_{51}

   L. Trans.: A_{01}, A_{11}, B_{02}, B_{37}, B'_{18}, B'_{36}, C_{02}, C_{11}, C_{34}, C_{51}, C_{52},

   C_{55}, C_{73}, D_{01}, D_{02}

Semigroup 4.67

   R. Trans.: A_{01}, C_{03}

   L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, B'_{44}, B'_{45}, C_{03},

   C_{21}, C_{39}, C_{40}, C_{47}, C_{48}, C_{55}, C_{67}, D_{03}, D_{04}

Semigroup 4.68

R. Trans.: A_{01}, D_{03}

L. Trans.: A_{01}, A_{03}, A_{10}, A_{14}, A_{20}, A_{23}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, B_{50}, B_{54}, B_{58}, B_{61}, B_{64}, B_{68}, B_{71}, B_{75}, B_{76}, B_{82}, B_{84}, B_{88}, B_{91}, B_{94}, B_{98}, B'_{02}, B'_{06}, B'_{07}, B'_{11}, B'_{13}, B'_{20}, B'_{21}, B'_{22}, B'_{24}, B'_{32}, B'_{33}, B'_{34}, B'_{36}, B'_{44}, B'_{45}, C_{03}, C_{19}, C_{20}, C_{22}, C_{34}, C_{37}, C_{39}, C_{40}, C_{42}, C_{45}, C_{47}, C_{48}, C_{55}, C_{58}, C_{59}, C_{67}, C_{70}, C_{71}, C_{80}, C_{81}, C_{84}, D_{03}

Semigroup 4.69

R. Trans.: A_{01}, A_{07}, B_{47}, B'_{44}, C_{25}, C_{26}, C_{49}, D_{01}

L. Trans.: A_{01}, C_{49}, D_{01}

Semigroup 4.70

R. Trans.: A_{01}, B'_{44}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, B'_{40}, B'_{41}, B'_{42}, B'_{43}, B'_{44}, B'_{45}, C_{03}, C_{27}, C_{28}, C_{31}, C_{32}, C_{35}, C_{36}, C_{39}, C_{40}, C_{43}, C_{44}, C_{47}, C_{48}, C_{49}, C_{50}, C_{55}, C_{56}, C_{67}, C_{68}, D_{01}, D_{02}

Semigroup 4.71

R. Trans.: A_{01}, B_{01}, B_{02}, B_{47}

L. Trans.: A_{01}, A_{10}, A_{20}, A_{23}, B_{02}, B_{06}, B_{08}, B_{24}, B_{32}, B_{50}, B_{58}, B_{61}, B_{68}, B_{71}, B_{82}, B_{91}, B_{98}, B'_{11}, B'_{22}, B'_{36}, C_{01}, C_{02}, C_{05}, C_{12}, C_{22}, C_{25}, C_{27}, C_{29}, C_{31}, C_{34}, C_{51}, C_{52}, C_{63}, C_{75}, D_{01}, D_{02}

Semigroup 4.72

R. Trans.: A_{01}, B'_{44}, C_{03}, C_{21}, D_{03}, D_{04}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, C_{03}

Semigroup 4.73

R. Trans.: A_{01}, B'_{44}, C_{03}, D_{03}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B'_{44}, B'_{45}, C_{03}, C_{39}, C_{40}, C_{47}, C_{55}, C_{67}, D_{03}

Semigroup 4.74

R. Trans.: A_{01}, B°_{44}, C_{03}, C_{22}, C_{80}, D_{03}

L. Trans.: A_{01}, A_{03}, B_{08}, B_{14}, D_{03}

Semigroup 4.75

R. Trans.: A_{01}, B'_{44}, C_{03}, D_{03}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, B'_{44}, B'_{45}, C_{03}, C_{39}, C_{40}, C_{47}, C_{48}, C_{55}, C_{67}, D_{03}

Semigroup 4.76

R. Trans.: A_{01}, B_{07}, B_{08}, B'_{16}, B'_{17}, C_{25}, C_{27}, C_{33}, C_{35}, C_{51}, C_{57}, D_{01}

L. Trans.: A_{01}, C_{33}, D_{01}

Semigroup 4.77

R. Trans.: A_{01}, A_{07}, B_{01}, B_{02}, B_{27}, B_{39}, B_{47}, B'_{16}, B'_{22}, B'_{30}, B'_{36}, B°_{44}, C_{27}, C_{32}, C_{51}, C_{53}

L. Trans.: A_{01}, B_{02}, B_{08}, B_{27}, B_{47}, B_{55}, B'_{16}, B'_{22}, C_{01}, C_{04}, C_{27}, C_{31}, C_{33}, C_{34}, C_{61}, D_{01}, D_{02}

Semigroup 4.78

R. Trans.: A_{01}, A_{07}, B_{01}, B_{02}, B_{27}, B_{39}, B_{47}, B'_{16}, B'_{22}, B'_{30}, B'_{36}, B'_{44}, C_{27}, C_{32}, C_{51}, C_{53}

L. Trans.: A_{01}, A_{11}, B_{02}, B_{37}, B'_{18}, B'_{36}, C_{02}, C_{11}, C_{33}, C_{34}, C_{51}, C_{52}, C_{55}, C_{73}, D_{01}, D_{02}

Semigroup 4.79

R. Trans.: A_{01}, B_{01}, B_{02}, B'_{22}, C_{27}, C_{53}

L. Trans.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{27}, C_{31}, C_{34}, D_{01}, D_{02}

Semigroup 4.80

R. Trans.: A_{01}, B_{01}, B_{02}, B'_{36}, C_{32}, C_{51}

L. Trans.: A_{01}, B_{02}, B'_{36}, C_{02}, C_{34}, C_{51}, C_{52}, D_{01}, D_{02}

Semigroup 4.81

R. Trans.: A_{01}, C_{51}

L. Trans.: A_{01}, A_{11}, B_{02}, B_{37}, B'_{18}, B'_{36}, C_{02}, C_{11}, C_{33}, C_{34}, C_{51}, C_{52}, C_{55}, C_{73}, D_{01}, D_{02}

Semigroup 4.82

R. Trans.: A_{01}, B_{01}, B_{02}, B'_{22}, C_{27}, C_{53}

L. Trans.: A_{01}, B'_{22}, C_{01}, D_{01}, D_{02}

Semigroup 4.83

R. Trans.: A_{01}, C_{27}, C_{51}

L. Trans.: A_{01}, B_{02}, C_{33}, C_{34}, C_{55}, D_{01}, D_{02}

Semigroup 4.84

R. Trans.: A_{01}, B'_{22}, C_{01}, C_{07}, D_{01}, D_{04}

L. Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}

Semigroup 4.85

R. Trans.: A_{01}, B'_{16}, C_{27}

L. Trans.: A_{01}, B_{08}, B'_{16}, C_{27}, C_{31}, C_{33}, D_{01}, D_{02}

Semigroup 4.86

R. Trans.: A_{01}, B_{01}, B_{02}, D_{04}

L. Trans.: A_{01}, B_{02}, B_{06}, B_{08}, B_{71}, C_{01}, C_{02}, C_{09}, C_{16}, C_{63}, C_{75}, D_{04}

Semigroup 4.87

R. Trans.: A_{01}, A_{07}, B_{01}, B_{02}, B_{27}, B_{39}, B_{47}, B'_{16}, B'_{30}, B'_{22}, B'_{36}, B'_{44}, C_{27}, C_{32}, C_{51}, C_{53}

L. Trans.: A_{01}, D_{01}, D_{02}

Semigroup 4.88

R. Trans.: A_{01}, B'_{16}, C_{27}, C_{51}

L. Trans.: A_{01}, C_{33}, D_{01}, D_{02}

Semigroup 4.89

R. Trans.: A_{01}, C_{27}

L. Trans.: A_{01}, A_{07}, B_{02}, B_{08}, B_{27}, B_{47}, B_{55}, B'_{16}, B'_{22}, B'_{44}, C_{01}, C_{04}, C_{27}, C_{31}, C_{33}, C_{34}, C_{55}, C_{61}, D_{01}, D_{02}

Semigroup 4.90

R. Trans.: A_{01}, B_{02}, D_{04}

L. Trans.: A_{01}, B_{02}, B_{06}, B_{08}, B_{71}, C_{01}, C_{02}, C_{09}, C_{16}, C_{63}, C_{75}, D_{04}

Semigroup 4.91

R. Trans.: A_{01}, B_{02}, B'_{22}, C_{27}

L. Trans.: A_{01}, B_{02}, B_{08}, B'_{22}, C_{01}, C_{27}, C_{31}, C_{34}, D_{01}, D_{02}

Semigroup 4.92

R. Trans.: A_{01}, B_{02}, B'_{36}, C_{51}

L. Trans.: A_{01}, B_{02}, B'_{36}, C_{02}, C_{34}, C_{51}, C_{52}, D_{01}, D_{02}

Semigroup 4.93

R. Trans.: A_{01}, B_{01}, B_{02}, B'_{22}, C_{27}, C_{53}

L. Trans.: A_{01}, B'_{22}, C_{01}, D_{01}, D_{02}

Semigroup 4.94

R. Trans.: A_{01}, B'_{44}, C_{27}

L. Trans.: A_{01}, B_{08}, B'_{44}, C_{27}, C_{31}, C_{34}, C_{55}, D_{01}, D_{02}

Semigroup 4.95

R. Trans.: A_{01}, B'_{44}, C_{27}, C_{51}

L. Trans.: A_{01}, C_{55}, D_{01}, D_{02}

Semigroup 4.96

R. Trans.: A_{01}, B'_{22}, B'_{36}, B'_{44}

L. Trans.: A_{01}, D_{01}, D_{02}, D_{03}

Semigroup 4.97

R. Trans.: A_{01}, B'_{44}, C_{27}, C_{32}

L. Trans.: A_{01}, B'_{44}, D_{01}, D_{02}

Semigroup 4.98

R. Trans.: A_{01}, D_{03}, D_{04}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, B_{61}, B_{71}, B_{91}, $B_{02}^{\prime}$, C_{03}, C_{22}, C_{81}, C_{84}

Semigroup 4.99

R. Trans.: A_{01}, B_{01}, B_{02}, D_{04}

L. Trans.: A_{01}, C_{01}, C_{02}, D_{04}

Semigroup 4.100

R. Trans.: A_{01}, C_{03}, C_{22}

L. Trans.: A_{01}, A_{03}, A_{07}, A_{11}, B_{08}, B_{14}, B_{47}, B_{48}, B_{55}, B_{79}, $B_{44}^{\prime}$, $B_{45}^{\prime}$, C_{55}, C_{61}, C_{67}, C_{73}, D_{03}, D_{04}

Semigroup 4.101

R. Trans.: A_{01}

L. Trans.: The transformation semigroup of degree four.

Semigroup 4.102

R. Trans.: A_{01}, D_{04}

L. Trans.: A_{01}, A_{02}, A_{03}, A_{04}, A_{05}, A_{06}, B_{01}, B_{02}, B_{03}, B_{04}, B_{05}, B_{06}, B_{07}, B_{08}, B_{09}, B_{10}, B_{11}, B_{12}, B_{13}, B_{14}, B_{15}, B_{16}, B_{17}, B_{18}, B_{31}, B_{32}, B_{41}, B_{42}, B_{47}, B_{48}, B_{61}, B_{62}, B_{71}, B_{72}, B_{77}, B_{78}, B_{91}, B_{92}, $B_{02}^{\prime}$, $B_{03}^{\prime}$, $B_{08}^{\prime}$, $B_{09}^{\prime}$, C_{01}, C_{02}, C_{03}, C_{08}, C_{09}, C_{10}, C_{15}, C_{16}, C_{17}, C_{22}, C_{23}, C_{24}, C_{61}, C_{63}, C_{66}, C_{73}, C_{75}, C_{78}, C_{79}, C_{81}, C_{84}, D_{04}

Semigroup 4.103

R. Trans.: A_{01}, C_{03}, C_{21}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, C_{03}, C_{21}

Semigroup 4.104

R. Trans.: A_{01}, C_{03}, D_{04}

L. Trans.: A_{01}, A_{03}, B_{07}, B_{08}, B_{10}, B_{13}, B_{14}, B_{17}, C_{03}, D_{04}

Semigroup 4.105

R. Trans.: A_{01}, B_{08}, B_{50}, $B_{22}^{\prime}$, $B_{44}^{\prime}$, C_{03}, C_{22}, C_{34}, C_{37}, C_{55}, C_{80}, D_{03}

L. Trans.: A_{01}, B_{08}, C_{19}, D_{03}

Semigroup 4.106

R. Trans.: A_{01}, A_{03}, $B_{44}^{\prime}$, $B_{45}^{\prime}$, C_{03}, C_{22}, C_{80}, D_{03}

L. Trans.: A_{01}, A_{03}, D_{03}

Semigroup 4.107

R. Trans.: A_{01}, C_{01}, C_{07}

L. Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}, C_{07}

Semigroup 4.108

R. Trans.: A_{01}, $B_{22}^{\prime}$, $B_{44}^{\prime}$, C_{01}, C_{33}, D_{01}

L. Trans.: A_{01}, B_{07}, B_{08}, $B_{42}^{\prime}$, $B_{44}^{\prime}$, C_{27}, C_{32}, C_{35}, C_{40}, C_{49}, C_{55}, D_{01}

Semigroup 4.109

R. Trans.: A_{01}, $B_{22}^{\prime}$, $B_{36}^{\prime}$, $B_{44}^{\prime}$, C_{01}, C_{25}, C_{33}, D_{01}

L. Trans.: A_{01}, B_{02}, B_{08}, $B_{11}^{\prime}$, $B_{16}^{\prime}$, $B_{22}^{\prime}$, $B_{36}^{\prime}$, $B_{44}^{\prime}$, C_{01}, C_{25}, C_{27}, C_{33}, C_{34}, C_{51}, C_{55}, D_{01}

Semigroup 4.110

R. Trans.: A_{01}, A_{02}, A_{07}, A_{08}, A_{09}, A_{10}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, B_{19}, B_{23}, B_{27}, B_{28}, B_{35}, B_{39}, B_{41}, B_{45}, B_{47}, B_{53}, B_{55}, B_{57}, B_{58}, B_{65}, B_{69}, B_{71}, B_{75}, B_{77}, $B_{10}^{\prime}$, $B_{11}^{\prime}$, $B_{16}^{\prime}$, $B_{17}^{\prime}$, $B_{22}^{\prime}$, $B_{23}^{\prime}$, $B_{30}^{\prime}$, $B_{32}^{\prime}$, $B_{36}^{\prime}$, $B_{38}^{\prime}$, $B_{42}^{\prime}$, $B_{44}^{\prime}$, C_{01}, C_{04}, C_{05}, C_{10}, C_{25}, C_{26}, C_{27}, C_{32}, C_{33}, C_{34}, C_{35}, C_{40}, C_{49}, C_{51}, C_{53}, C_{55}, C_{57}, C_{59}, C_{61}, C_{63}, C_{65}, D_{01}

L. Trans.: A_{01}, D_{01}

Semigroup 4.111

R. Trans.: A_{01}, $B_{22}^!$, C_{01}, C_{05}, C_{63}, D_{01}

L. Trans.: A_{01}, B_{02}, C_{34}, C_{35}, C_{59}, D_{01}

Semigroup 4.112

R. Trans.: A_{01}, B_{01}, B_{02}, $B_{10}^!$, $B_{11}^!$, C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, D_{01}

L. Trans.: A_{01}, C_{25}, D_{01}

Semigroup 4.113

R. Trans.: A_{01}, $B_{22}^!$, $B_{44}^!$, C_{01}, C_{33}, D_{01}

L. Trans.: A_{01}, B_{07}, B_{08}, C_{27}, C_{35}, D_{01}

Semigroup 4.114

R. Trans.: A_{01}, $B_{22}^!$, $B_{44}^!$, C_{01}, C_{33}, D_{01}

L. Trans.: A_{01}, B_{07}, B_{08}, C_{27}, C_{35}, D_{01}

Semigroup 4.115

R. Trans.: A_{01}, $B_{36}^!$, D_{01}

L. Trans.: A_{01}, B_{01}, B_{02}, $B_{36}^!$, $B_{38}^!$, C_{26}, C_{32}, C_{34}, C_{40}, C_{51}, C_{57}, D_{01}

Semigroup 4.116

R. Trans.: A_{01}, C_{01}, D_{04}

L. Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, C_{01}, D_{04}

Semigroup 4.117

R. Trans.: A_{01}, $B_{22}^!$, C_{01}, D_{01}

L. Trans.: A_{01}, A_{02}, B_{01}, B_{02}, B_{03}, B_{07}, B_{08}, B_{09}, $B_{22}^!$, $B_{23}^!$, C_{01}, C_{26}, C_{27}, C_{34}, C_{35}, C_{53}, C_{59}, D_{01}

Semigroup 4.118

R. Trans.: A_{01}, $B_{36}^!$, C_{33}, D_{01}

L. Trans.: A_{01}, C_{51}, C_{57}, D_{01}

Semigroup 4.119

R. Trans.: A_{01}, C_{55}, D_{01}

L. Trans.: A_{01}, B_{08}, $B_{44}^{\prime}$, C_{25}, C_{27}, C_{51}, C_{55}, D_{01}

Semigroup 4.120

R. Trans.: A_{01}, A_{11}, B_{01}, B_{29}, $B_{22}^{\prime}$, $B_{28}^{\prime}$, C_{53}, C_{54}

L. Trans.: A_{01}, C_{53}, C_{54}

Semigroup 4.121

R. Trans.: A_{01}, B_{01}, B_{02}, $B_{10}^{\prime}$, $B_{11}^{\prime}$, C_{25}, C_{26}, C_{33}, C_{34}, C_{49}, C_{55}, D_{01}

L. Trans.: A_{01}, B_{03}, B_{19}, $B_{22}^{\prime}$, $B_{36}^{\prime}$, C_{01}, C_{04}, C_{25}, C_{26}, C_{49}, C_{61}, D_{01}

APPENDIX

APPENDIX

In this appendix, compiled jointly by Messrs. K. S. Carman, J. C. Harden, and E. E. Posey, are listed what the authors believe to be all distinct semigroups of orders two, three, and four, and their proper sub-semigroups. Two semigroups are regarded as distinct if no isomorphism (or anti-isomorphism) can be set up between them.

Commutative semigroups of these orders (under the name of "finite ova") were listed by A. R. Poole in his dissertation,[1] but were omitted from the published version.[2] We have constructed independently all semigroups of orders two and three (non-commutative as well as commutative), and our list of commutative semigroups of those orders agrees perfectly with Poole's.

In addition to constructing the non-commutative semigroups of order four, we have examined Poole's list of commutative semigroups of that order, and have found what appear to be a few errors. It should be pointed out that the copy of Poole's thesis available to us was a carbon copy borrowed from the library of the California Institute of Technology, with the subscripts in the semigroup multiplication tables filled in by hand, so that it is entirely possible that the errors noted do not occur in the original dissertation; indeed, some of these errors are obviously merely mistakes in copying. We did not construct the commutative

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[1]A. R. Poole, "Finite Ova," (Doctoral Dissertation, California Institute of Technology, 1935).

[2]A. R. Poole, "Finite Ova," The American Journal of Mathematics, 59:23-32, 1937.

semigroups of order four independently, and cannot claim that our examination of Poole's list was sufficiently exhaustive to preclude the possibility that it contains errors other than those noted below.

Poole's R 4_{21} appears as:

$$
\begin{array}{cccc}
u_1 & u_1 & u_1 & u_1 \\
u_1 & u_2 & u_3 & u_2 \\
u_1 & u_3 & u_1 & u_3 \\
u_1 & u_2 & u_1 & u_2
\end{array}
$$

which is non-commutative since $u_4 u_3 \neq u_3 u_4$. An examination of associativity shows that if $u_4 u_3 = u_1$ then the system is not a semigroup regardless of what the product $u_3 u_4$ may be. Changing $u_4 u_3$ from u_1 to u_3, we have a commutative semigroup, distinct from all others in Poole's list, which is given in our list as No. 4.38.

The multiplication table of Poole's R 4_{30} is identical with that of his R 4_{17}; this semigroup appears in our list as No. 4.9. Changing a single subscript yields a new commutative semigroup, No. 4.5 in our list:

R 4_{17}, R 4_{30} 4.5

$$
\begin{array}{cccc}
u_1 & u_1 & u_1 & u_1 \\
u_1 & u_2 & u_1 & u_2 \\
u_1 & u_1 & u_1 & u_1 \\
u_1 & u_2 & u_1 & u_2
\end{array}
\qquad
\begin{array}{cccc}
u_1 & u_1 & u_1 & u_1 \\
u_1 & u_2 & u_1 & u_2 \\
u_1 & u_1 & u_1 & u_1 \\
u_1 & u_2 & u_1 & u_4
\end{array}
$$

Poole's T 4_2 and T 4_3 are identical, and appear in our list as No. 4.22. Two changes produce a new commutative semigroup, our No. 4.23:

4a

and the twelve commutative semigroups of order three, the latter being
identical (to within isomorphism) with Poole's ova of order three. In
Table IIIa we list the 55 commutative semigroups of order four (Nos. 4.1-
4.55) and the 66 non-commutative semigroups of order four (Nos. 4.56 -
4.121).

In Table IVa, the columns are headed by the reference numbers of
the semigroups of order two, and the rows are labeled with the reference
numbers of the semigroups of order three. If No. 3.z ($z = 1, \ldots, 18$)
contains k subsemigroups isomorphic to No. 2.y ($y = 1, \ldots, 4$), the
letter k is placed at the intersection of the row 3.z and the column
2.y. Table Va exhibits similarly the subsemigroups of orders two and
three of the semigroups of order four. Subsemigroups of order one are
simply the idempotent elements of a semigroup, and are not listed
separately since they are visible immediately upon inspection of the
multiplication table of the semigroup.

It would be futile to expect tables of this sort to be entirely
free from errors. The authors have checked their work repeatedly, and
have rectified several mistakes, but others have doubtless escaped their
notice. They will appreciate receiving corrections from users of the
tables.

TABLE Ia

SEMIGROUPS OF ORDER TWO

2.1	2.2	2.3	2.4
1 2	1 1	1 1	1 1
2 1	1 2	2 2	1 1

TABLE IIa

SEMIGROUPS OF ORDER THREE

3.1	3.2	3.3	3.4	3.5	3.6
1 2 2	1 1 1	1 2 3	1 1 3	1 1 3	1 1 1
2 1 1	1 1 1	2 3 1	1 1 3	1 2 3	1 1 1
2 1 1	1 1 2	3 1 2	3 3 1	3 3 1	1 1 3

3.7	3.8	3.9	3.10	3.11	3.12
1 1 1	1 1 1	1 1 1	1 1 3	1 2 3	1 1 1
1 2 1	1 1 2	2 2 2	1 1 3	2 1 3	2 2 2
1 3 1	1 2 3	1 1 1	3 3 3	3 3 3	1 1 3

3.13	3.14	3.15	3.16	3.17	3.18
1 1 1	1 1 1	1 1 3	1 1 1	1 1 1	1 1 1
2 2 2	2 2 2	2 2 3	1 2 2	1 2 1	1 1 1
1 2 3	3 3 3	3 3 3	1 2 3	1 1 3	1 1 1

TABLE IIIa

SEMIGROUPS OF ORDER FOUR

4.1	4.2	4.3	4.4	4.5	4.6	4.7
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 2 2 2	1 2 1 1	1 1 1 1	1 2 1 4	1 2 1 2	1 2 1 1	1 1 1 1
1 2 3 3	1 1 1 1	1 1 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 2
1 2 3 3	1 1 1 1	1 1 2 2	1 4 1 1	1 2 1 4	1 1 1 3	1 1 2 2

4.8	4.9	4.10	4.11	4.12	4.13	4.14
1 1 1 1	1 1 1 1	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 1	1 2 1 1
1 1 1 3	1 2 1 2	2 1 4 3	2 1 4 3	2 3 1 4	2 3 1 2	2 1 2 2
1 1 1 1	1 1 1 1	3 4 2 1	3 4 1 2	3 1 2 4	3 1 2 3	1 2 3 4
1 3 1 2	1 2 1 2	4 3 1 2	4 3 2 1	4 4 4 4	1 2 3 4	1 2 4 3

4.15	4.16	4.17	4.18	4.19	4.20	4.21
1 2 1 2	1 2 1 1	1 2 1 1	1 2 3 1	1 2 3 3	1 2 3 4	1 1 1 4
2 1 2 1	2 1 2 2	2 1 2 2	2 1 3 2	2 1 3 3	2 1 3 4	1 2 3 4
1 2 3 4	1 2 3 1	1 2 3 4	3 3 3 3	3 3 3 3	3 3 3 4	1 3 1 4
2 1 4 3	1 2 1 4	1 2 4 4	1 2 3 4	3 3 3 4	4 4 4 4	4 4 4 1

4.22	4.23	4.24	4.25	4.26	4.27	4.28
1 1 1 4	1 1 1 4	1 1 3 3	1 2 1 4	1 2 4 4	1 1 1 1	1 1 1 1
1 2 1 4	1 2 1 4	1 2 3 4	2 2 2 2	2 2 2 2	1 2 1 4	1 2 3 4
1 1 1 4	1 1 3 4	3 3 1 1	1 2 1 4	4 2 1 1	1 1 1 1	1 3 1 3
4 4 4 1	4 4 4 4	3 4 1 1	4 2 4 1	4 2 1 1	1 4 1 2	1 4 3 2

4.29	4.30	4.31	4.32	4.33	4.34	4.35
1 1 3 1	1 2 1 1	1 2 1 2	1 2 2 2	1 1 3 1	1 1 3 3	1 2 3 3
1 2 3 2	2 1 2 2	2 1 2 1	2 1 1 1	1 1 3 1	1 1 3 3	2 3 1 1
3 3 1 3	1 2 1 1	1 2 1 2	2 1 1 1	3 3 1 3	3 3 1 1	3 1 2 2
1 2 3 2	1 2 1 1	2 1 2 1	2 1 1 1	1 1 3 2	3 3 1 2	3 1 2 2

4.36	4.37	4.38	4.39	4.40	4.41	4.42
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 2 3 3	1 2 3 4	1 2 3 2	1 2 3 4	1 2 2 2	1 2 2 2	1 2 2 2
1 3 1 1	1 3 1 1	1 3 1 3	1 3 1 1	1 2 2 2	1 2 2 2	1 2 3 3
1 3 1 1	1 4 1 1	1 2 3 2	1 4 1 3	1 2 2 2	1 2 2 3	1 2 3 4

TABLE IIIa

SEMIGROUPS OF ORDER FOUR (Continued)

```
   4.43        4.44        4.45        4.46        4.47        4.48        4.49

 1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1
 1 2 2 1     1 2 2 1     1 2 2 4     1 2 2 2     1 2 2 2     1 2 1 1     1 2 1 2
 1 2 3 1     1 2 3 4     1 2 3 4     1 2 3 2     1 2 3 4     1 1 3 1     1 1 3 3
 1 1 1 4     1 1 4 1     1 4 4 1     1 2 2 2     1 2 4 2     1 1 1 4     1 2 3 4


   4.50        4.51        4.52        4.53        4.54        4.55        4.56

 1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 4
 1 2 1 1     1 2 1 1     1 2 1 2     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 4
 1 1 3 1     1 1 3 4     1 1 3 1     1 1 1 2     1 1 1 1     1 1 1 1     1 1 2 4
 1 1 1 1     1 1 4 1     1 2 1 2     1 1 2 1     1 1 1 2     1 1 1 1     1 1 1 4


   4.57        4.58        4.59        4.60        4.61        4.62        4.63

 1 1 1 4     1 1 3 4     1 1 1 1     1 2 3 4     1 1 3 4     1 1 1 1     1 1 1 1
 1 2 3 4     1 1 3 4     2 2 2 2     2 1 3 4     1 1 3 4     2 2 2 2     2 2 2 2
 1 3 2 4     3 3 3 4     1 1 1 2     3 3 3 4     3 3 3 4     3 3 3 3     1 2 3 4
 1 1 1 4     3 3 3 4     4 4 4 4     4 4 3 4     4 4 3 4     1 2 2 4     2 1 4 3


   4.64        4.65        4.66        4.67        4.68        4.69        4.70

 1 1 3 3     1 2 3 4     1 1 1 1     1 1 3 3     1 1 3 3     1 1 1 1     1 1 1 1
 2 2 4 4     2 1 4 3     2 2 2 2     2 2 3 3     2 2 3 3     1 1 2 2     2 2 2 2
 1 1 3 3     1 2 3 4     1 1 3 3     3 3 3 3     3 3 3 3     1 2 3 4     3 3 3 3
 2 2 4 4     2 1 4 3     2 2 4 4     4 4 4 4     4 4 3 3     1 2 3 4     3 3 3 4


   4.71        4.72        4.73        4.74        4.75        4.76        4.77

 1 1 1 1     1 1 3 4     1 1 3 3     1 1 3 4     1 1 3 3     1 1 1 1     1 1 1 1
 2 2 2 2     2 2 3 4     2 2 3 3     2 2 3 4     2 2 3 3     1 1 1 3     2 2 2 2
 1 1 1 1     3 3 3 4     3 3 3 3     3 3 3 3     3 3 3 3     1 1 1 3     1 1 1 1
 4 4 4 4     3 3 3 4     3 3 3 4     3 3 3 3     3 3 3 3     1 2 3 4     1 1 1 1


   4.78        4.79        4.80        4.81        4.82        4.83        4.84

 1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 4
 2 2 2 2     2 2 2 2     2 2 2 2     2 2 2 2     2 2 2 2     2 2 2 2     1 2 1 4
 1 1 1 1     1 1 1 1     1 1 1 1     1 1 1 3     1 2 3 1     1 1 1 3     1 3 1 4
 2 2 2 2     1 1 1 4     2 2 2 4     2 2 2 4     1 1 1 1     1 2 1 4     1 1 1 4
```

TABLE IIIa

SEMIGROUPS OF ORDER FOUR (Continued)

4.85	4.86	4.87	4.88	4.89	4.90	4.91
1 1 1 1	1 1 1 4	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 4	1 1 1 1
2 2 2 2	2 2 2 4	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 4	2 2 2 2
1 1 1 3	1 1 1 4	1 1 1 1	1 1 1 3	1 1 1 3	1 1 3 4	1 1 3 1
1 1 3 4	4 4 4 4	1 2 3 4	1 2 3 4	1 1 1 4	4 4 4 4	1 1 1 4

4.92	4.93	4.94	4.95	4.96	4.97	4.98
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 3 4
2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 3 4
1 1 3 1	1 2 3 1	1 1 3 3	1 1 3 3	3 3 3 3	1 2 3 3	3 3 3 4
2 2 2 4	1 1 1 4	1 1 3 4	1 2 3 4	1 2 3 4	1 2 3 4	4 4 3 4

4.99	4.100	4.101	4.102	4.103	4.104	4.105
1 1 1 4	1 1 3 4	1 1 1 1	1 1 1 4	1 1 3 4	1 1 3 4	1 1 3 4
2 2 2 4	2 2 3 4	2 2 2 2	2 2 2 4	2 2 3 4	2 2 3 4	1 1 3 4
1 2 3 4	3 3 3 3	3 3 3 3	3 3 3 4	3 3 3 4	3 3 3 4	3 3 3 3
4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 3	4 4 4 4	3 3 3 3

4.106	4.107	4.108	4.109	4.110	4.111	4.112
1 2 3 4	1 1 1 4	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
2 1 3 4	1 2 1 4	1 2 1 1	1 2 1 1	1 1 1 1	1 2 1 4	1 1 1 2
3 3 3 3	1 3 1 4	1 3 1 1	1 3 1 1	1 1 1 1	1 3 1 1	1 1 1 1
3 3 3 3	4 4 4 1	1 3 1 1	1 1 1 1	1 2 3 4	1 1 1 1	1 2 3 4

4.113	4.114	4.115	4.116	4.117	4.118	4.119
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 4	1 1 1 1	1 1 1 1	1 1 1 1
1 2 1 1	1 2 1 1	1 2 1 2	1 2 1 4	1 2 1 1	1 2 1 2	1 1 1 2
1 3 1 1	1 3 1 1	1 3 1 3	1 3 1 4	1 3 1 1	1 3 1 3	1 1 3 3
1 3 3 4	1 1 3 4	1 2 1 4	4 4 4 4	1 1 1 4	1 2 3 4	1 1 3 4

4.120	4.121
1 2 2 1	1 1 1 1
2 1 1 2	1 1 1 1
2 1 1 2	1 1 1 2
1 2 3 4	1 1 1 1

TABLE IVa

PROPER SUBSEMIGROUPS OF SEMIGROUPS OF ORDER THREE

	2.1	2.2	2.3	2.4
3.1	1			
3.2				1
3.3				
3.4	1			1
3.5	1	1		
3.6		1		1
3.7		1		1
3.8		1		1
3.9			1	1
3.10		1		1
3.11	1	1		
3.12		1	1	
3.13		2	1	
3.14			3	
3.15		2	1	
3.16		3		
3.17		2		
3.18				2

TABLE Va

PROPER SUBSEMIGROUPS OF SEMIGROUPS OF ORDER FOUR

4.	2.				3.																	
	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1		3		1										2						1		
2		1		2						2												1
3				1		2																
4		1		2						1		1										1
5		3		1						2										1		
6		1		1		1				1												
7				2		1															1	
8				2																		1
9		1		2						1				1								
10																						
11																						
12		1					1															
13		1					1															
14	2								1						1							
15	2								1													
16	1	2							2												1	
17	1	3							2											1		
18	1	3							1						1					1		
19	1	3													1						1	
20	1	3													2					1		
21	1	1		1				1	1			1										
22	1	1		1				1	1	1												
23		5																		2	1	
24	1	1			1				1													
25	1	1		1				1						1	1							
26	1	1			1										1							
27		1		1						1					1							
28		1		1								1			1							
29	1	1							1					1								
30	1			2				2														1
31	1			1	1				1													
32	1				2																	
33	1			1		1			1													
34	1			1					1													
35							1															
36		1		2								1										1
37		1		2								1										1
38		1		2								1			1							
39		1		1		1						1										
40		1		2										2								1
41		1		1		1								1								

TABLE Va

PROPER SUBSEMIGROUPS OF SEMIGROUPS OF ORDER FOUR
(Continued)

11a

4.	2.				3.																	
	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
42		6																		4		
43		4																		1	2	
44		3								1		1								1		
45		3										2								1		
46		3								1				1						1		
47		3		1								1		1						1		
48		3																			3	
49		4																		2	1	
50		2		1						2											1	
51		2		1						1		1									1	
52		2												1							1	
53				3																		2
54				2		1																1
55				3																		3
56			1	1		1							1									
57	1	1	1												1	1						
58		1	1	1											1	1						
59			3	1									1					1				
60	1	1	1												2		1					
61		2	1	1											2		1					
62		2	3													1	1	1				
63	1	2	1														1					
64			3																			
65	2		1																			
66		1	2													2						
67		2	2													2		1				
68		2	1	1							2							1				
69		2	1	1								2						1				
70		1	3													2		1				
71			3	1									2					1				
72		1	2													2			1			
73		3	1																1		2	
74		2	1	1							2								1			
75		2	1	1						2									1			
76		1		2								1										1
77			1	2									2									1
78			1	2									2									
79		1	1	1						1			1			1						
80		1	1	1									1			1						
81		1	1	1									1			1						
82		2	1	1		1							1				1					

TABLE Va

PROPER SUBSEMIGROUPS OF SEMIGROUPS OF ORDER FOUR
(Continued)

4.	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14	3.15	3.16	3.17	3.18
83		2	1	1							1		1				1					
84		1	1								1		1			1						
85		1	1	1								1	1			1						
86		2	1	1									1	1						1		
87		2	1	1							1		1				1					
88		2	1	1								1	1				1					
89		1	1	1							1		1			1						
90		4	1													1			1	1		
91		2	1													2					1	
92		2	1													2						
93		3	1													1	1		1			
94		3	1													2			1			
95		4	1													1	1		1			
96		3	3														3	1				
97		5	1														2			2		
98		4	2														2		2			
99		5	1														1		1	2		
100		4	2															2	2			
101			6															4				
102		3	3															1	3			
103	1	2	1						2										1			
104		5	1																2	2		
105		1		2							1			1								
106	1	1		1							1				1							
107	1	1		1				1	1		1											
108		1		2							1											1
109		2		1						1	1										1	
110		1		2							2											1
111		1		2							2											1
112		1		2							1	1										1
113		2		1							2											
114		2		1							2										1	
115		3		1							1									2		
116		3		1							1				1					1		
117		2		1						1	1										1	
118		3		1							1	1								1		
119		3		1						1	1									1		
120	1	1			1				1													
121			3																			2

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