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H Dubose-Schmidt

Rose-Hulman Institute of Technology

Michael D. Galloy

Rose-Hulman Institute of Technology

D,L, Wilson

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**COUNTING NILPOTENT PAIRS IN
FINITE GROUPS: SOME CONJECTURES**

H. Dubose-Schmidt, M.D. Galloy and D.L. Wilson

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**Department of Mathematics
Rose-Hulman Institute of Technology
Terre Haute, IN 47803**

FAX(812) 877-3198

Phone: (812) 877-8391

Counting Nilpotent Pairs in Finite Groups: Some Conjectures*

H. Dubose-Schmidt, M. D. Galloy, and D. L. Wilson

Introduction

Erdős and Turán [1] have shown that the number of commuting pairs in a finite group G is $k|G|$; i.e.

$$k|G| = |\{(x, y) : xy = yx\}|,$$

where k is the number of conjugacy classes. Thus, we may interpret the ratio

$$\frac{|\{(x, y) : xy = yx\}|}{|G|^2} = \frac{k|G|}{|G|^2} = \frac{k}{|G|}$$

as the probability of two elements commuting, say p_1 . It is well known [2] that

$$p_1 \begin{cases} = 1 & \text{if } G \text{ is abelian} \\ \leq \frac{5}{8} & \text{if } G \text{ is non-abelian} \end{cases}.$$

We are concerned with the generalization of this notion to nilpotency. In particular, we are interested in the generating function

$$N(x; G) = p_0 + p_1x + p_2x^2 + \dots + p_ix^i + \dots$$

where

$$p_i = \frac{|\{(x, y) : \langle x, y \rangle \text{ is nilpotent of class } i\}|}{|G|^2}.$$

For example, if G is nilpotent of class 1 (i.e., G is abelian) we have

$$N(x; G) = x.$$

*This technical report was produced in conjunction with a Topics in Group Theory Course at Rose-Hulman Institute of Technology during the spring quarter of 1992.

And, in view of Erdős and Turàn's result, if G is nilpotent of class 2, then

$$N(x; G) = \left(\frac{k}{|G|}\right)x + \left(1 - \frac{k}{|G|}\right)x^2.$$

Our question: Can the distribution of p_i 's be determined for an arbitrary group of finite order?

Conjectures

The following conjectures were supported or suggested by the data which is appended.

Conjecture. *The number of pairs of elements in a finite group generating subgroups with a specific nilpotency class is a multiple of $|G|$.*

Conjecture. *If G is a finite group of nilpotency class m (i.e., $p_0 = 0$), then $p_i \neq 0$, for $1 \leq i \leq m$.*

Conjecture. *If G is a finite non-nilpotent group, then there exists a j such that*

$$p_i \neq 0 \text{ for } 0 \leq i \leq j$$

and

$$p_i = 0 \text{ for } i \geq j.$$

Conjecture. *For a finite group G of nilpotency class m ,*

$$p_m \geq 1 - \frac{q^2 + q - 1}{q^3},$$

where q is the smallest prime divisor of $|G|$. For instance, when $q = 2$,

$$p_m \geq \frac{3}{8}.$$

Conjecture. *Let G and H both be finite nilpotent groups of the same order and have identical generating functions $N(x; G)$. The orders of the groups in the ascending central series of these groups are the same.*

Conjecture. *If G is a finite non-nilpotent group, then $p_0 \geq \frac{1}{2}$. Furthermore, $p_0 = \frac{1}{2}$ if, and only if, $G/Z_n \cong S_3$, where Z_n is the limit of the ascending central series of G .*

References

- [1] P. Erdős and P. Turán. *On Some Problems of a Statistical Group Theory, IV.* Acta Math. Acad. Science Hung., 19 (1968), 413-435.
- [2] W. H. Gustafson. *What is the Probability That Two Group Elements Commute?* American Mathematical Monthly, 80 (1973) 1031-1034.

Computer Generated Data

In the computation of the generating function, $N(x; G)$ we used the fact that *If $a, b, c, d \in G$ with $aZ = bZ$ and $cZ = dZ$, then $N(\langle a, c \rangle) = N(\langle b, d \rangle)$.*

The following procedures were run on a VAX 8650 using Cayley V3.7.2 to collect our data. TRANIL was used to compute the generating function, $N(x; G)$, for each group of order less than 100. Due to a bug in the version of Cayley we were using, in groups with small centers the procedure was broken into four individual parts and the results summed to produce the generating function.

```
procedure tranil(g);
  print 'Nil. class of g:', nilpotency class(g);
  h=transversal(g,center(g));
  csize=order(center(g));
  nilseq=seq(0,0,0,0,0,0,0);
  for i = 1 to order(h) do
    for j = 1 to order(h) do
      sub=<h[i],h[j]>;
      nilnum=nilpotency class(sub);
      nilseq[nilnum+1]=nilseq[nilnum+1]+1;
    end;
  end;
  sub=null;
  h=null;
  g=null;
  nilseq[1]=nilseq[1]*csize^2;
  nilseq[2]=nilseq[2]*csize^2;
  nilseq[3]=nilseq[3]*csize^2;
  nilseq[4]=nilseq[4]*csize^2;
  nilseq[5]=nilseq[5]*csize^2;
  nilseq[6]=nilseq[6]*csize^2;
  nilseq[7]=nilseq[7]*csize^2;
  print nilseq[1], ' ', nilseq[2], ' ', nilseq[3], ' ', nilseq[4], ' ',
    nilseq[5], ' ', nilseq[6], ' ', nilseq[7];
end;
```

RCOMM was used to calculate the number of commutators of length i that produce the identity in a random sample of j commutators. This procedure was used only with groups too large to calculate all of the commutators.

```
procedure rcomm(g,i,j);
  yy=nilpotency class(G);
  count=0;
  for i1=1 to j do
    comm=(ranelt(g),ranelt(g));
    for i2=3 to i do
      comm=(comm,ranelt(g));
    end;
    if comm eq identity then count = count +1;end;
  end;
  print count;
end;
```

The abbreviations in the table entitled “3/8 Bound for 2-Groups” are:

m	The nilpotency class of the group, G .
Predicted	The predicted number of subgroups generated by ordered pairs of elements with nilpotency class m .
Actual	The actual number of subgroups generated by ordered pairs of elements with nilpotency class m .
Number Generated	The number of subgroups generated.
Percent of Class m	$\frac{\text{Actual}}{\text{Number Generated}}$
Percent Error from 3/8	$\frac{\text{Percent of Class } m - 3/8}{3/8}$

The abbreviations in the table entitled “Generating Function for Groups of Order 100 or Less” are:

$ G $	The order of the group.
n	G is the n th group of order $ G $ in the Cayley GPS100.TLB library.
m	The nilpotency class of the group G .
$ Z $	The order of the center of the group G .
k_i	$k_i = k_i$. For $i = 0, 1, 2, 3, 4, 5$, this is $k_i = p_i G $.
p_i	$p_i = p_i$.

3/8 Bound for 2-Groups

		m	Predicted	Actual	Number Generated	Percent of Class m	Percent Error from 3/8	
Exact	gps16	3	96	96	256	0.375	0	
		4	96	96	256	0.375	0	
		9	96	96	256	0.375	0	
	gps32	18	384	384	1024	0.375	0	
		19	384	384	1024	0.375	0	
		20	384	384	1024	0.375	0	
	gps64	51	1536	1536	4096	0.375	0	
		52	1536	1536	4096	0.375	0	
		53	1536	1536	4096	0.375	0	
160		6144	6144	16384	0.375	0		
161		6144	6144	16384	0.375	0		
gps128	162	6144	6144	16384	0.375	0		
	538	Total	6213	16384	0.3792114257813	1.123046875		
	539	Total	6118	16384	0.3734130859375	-0.4231770833		
Statistical	gps256	d2	540	Total	6143	16384	0.3749389648438	-0.0162760417
			7	Total	6144	16384	0.3749389648438	-0.0162760417

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
6	1	0	1	3	3	0	0	0	0	0.5	0.5	0	0	0	0
8	1	2	2	0	5	3	0	0	0	0	0.625	0.375	0	0	0
8	2	2	2	0	5	3	0	0	0	0	0.625	0.375	0	0	0
10	1	0	1	6	4	0	0	0	0	0.6	0.4	0	0	0	0
12	1	0	2	6	6	0	0	0	0	0.5	0.5	0	0	0	0
12	2	0	1	8	4	0	0	0	0	0.6667	0.3333	0	0	0	0
12	3	0	2	6	6	0	0	0	0	0.5	0.5	0	0	0	0
14	1	0	1	9	5	0	0	0	0	0.6429	0.3571	0	0	0	0
16	1	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	2	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	3	3	2	0	7	3	6	0	0	0	0.4375	0.1875	0.375	0	0
16	4	3	2	0	7	3	6	0	0	0	0.4375	0.1875	0.375	0	0
16	5	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	6	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	7	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	8	2	4	0	10	6	0	0	0	0	0.625	0.375	0	0	0
16	9	3	2	0	7	3	6	0	0	0	0.4375	0.1875	0.375	0	0
18	1	0	3	9	9	0	0	0	0	0.5	0.5	0	0	0	0
18	2	0	1	12	6	0	0	0	0	0.6667	0.3333	0	0	0	0
18	3	0	1	12	6	0	0	0	0	0.6667	0.3333	0	0	0	0
20	1	0	2	12	8	0	0	0	0	0.6	0.4	0	0	0	0
20	2	0	1	15	5	0	0	0	0	0.75	0.25	0	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
20	3	0	2	12	8	0	0	0	0	0.6	0.4	0	0	0	0
21	1	0	1	16	5	0	0	0	0	0.7619	0.2381	0	0	0	0
22	1	0	1	15	7	0	0	0	0	0.6818	0.3182	0	0	0	0
24	1	0	2	16	8	0	0	0	0	0.6667	0.3333	0	0	0	0
24	2	0	4	12	12	0	0	0	0	0.5	0.5	0	0	0	0
24	3	2	6	0	15	9	0	0	0	0	0.625	0.375	0	0	0
24	4	2	6	0	15	9	0	0	0	0	0.625	0.375	0	0	0
24	5	0	4	12	12	0	0	0	0	0	0.625	0.375	0	0	0
24	6	0	4	12	12	0	0	0	0	0.5	0.5	0	0	0	0
24	7	0	2	12	9	3	0	0	0	0.5	0.5	0	0	0	0
24	8	0	1	16	5	3	0	0	0	0.5	0.375	0.125	0	0	0
24	9	0	2	16	7	1	0	0	0	0.6667	0.2083	0.125	0	0	0
24	10	0	2	12	9	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
24	11	0	4	12	12	0	0	0	0	0.5	0.375	0.125	0	0	0
24	12	0	2	12	9	3	0	0	0	0.5	0.5	0	0	0	0
26	1	0	1	18	8	0	0	0	0	0.5	0.375	0.125	0	0	0
27	1	2	3	0	11	16	0	0	0	0.6923	0.3077	0	0	0	0
27	2	2	3	0	11	16	0	0	0	0	0.4074	0.5926	0	0	0
28	1	0	2	18	10	0	0	0	0	0	0.4074	0.5926	0	0	0
28	2	0	2	18	10	0	0	0	0	0.6429	0.3571	0	0	0	0
30	1	0	3	18	12	0	0	0	0	0.6	0.4	0	0	0	0
30	2	0	5	15	15	0	0	0	0	0.5	0.5	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
30	3	0	1	21	9	0	0	0	0	0.7	0.3	0	0	0	0
32	1	1	32	0	32	0	0	0	0	0	1	0	0	0	0
32	2	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	3	1	32	0	32	0	0	0	0	0	1	0	0	0	0
32	4	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	5	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	6	3	2	0	11	9	12	0	0	0	0.3438	0.2813	0.375	0	0
32	7	3	2	0	11	9	12	0	0	0	0.3438	0.2813	0.375	0	0
32	8	3	2	0	11	9	12	0	0	0	0.3438	0.2813	0.375	0	0
32	9	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	10	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	11	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	12	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	13	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	14	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	15	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	16	1	32	0	32	0	0	0	0	0	1	0	0	0	0
32	17	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	18	4	2	0	11	3	6	12	0	0	0.3438	0.0938	0.1875	0.375	0
32	19	4	2	0	11	3	6	12	0	0	0.3438	0.0938	0.1875	0.375	0
32	20	4	2	0	11	3	6	12	0	0	0.3438	0.0938	0.1875	0.375	0
32	21	1	32	0	32	0	0	0	0	0	1	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
32	22	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	23	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	24	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	25	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	26	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	27	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	28	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	29	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	30	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	31	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	32	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	33	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	34	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	35	2	4	0	14	18	0	0	0	0	0.4375	0.5625	0	0	0
32	36	1	32	0	32	0	0	0	0	0	1	0	0	0	0
32	37	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	38	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	39	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	40	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	41	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	42	3	4	0	14	6	12	0	0	0	0.4375	0.1875	0.375	0	0
32	43	3	2	0	11	9	12	0	0	0	0.3438	0.2813	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
32	44	3	2	0	11	9	12	0	0	0	0.3438	0.2813	0.375	0	0
32	45	1	32	0	32	0	0	0	0	0	1	0	0	0	0
32	46	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	47	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	48	2	8	0	20	12	0	0	0	0	0.625	0.375	0	0	0
32	49	2	2	0	17	15	0	0	0	0	0.5313	0.4688	0	0	0
32	50	2	2	0	17	15	0	0	0	0	0.5313	0.4688	0	0	0
32	51	1	32	0	32	0	0	0	0	0	1	0	0	0	0
34	1	0	1	24	10	0	0	0	0	0.7059	0.2941	0	0	0	0
36	1	0	6	18	18	0	0	0	0	0.5	0.5	0	0	0	0
36	2	0	6	18	18	0	0	0	0	0.5	0.5	0	0	0	0
36	3	0	3	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	4	0	3	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	5	0	2	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	6	0	2	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	7	0	2	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	8	0	2	24	12	0	0	0	0	0.6667	0.3333	0	0	0	0
36	9	0	1	27	9	0	0	0	0	0.75	0.25	0	0	0	0
36	10	0	1	30	6	0	0	0	0	0.8333	0.1667	0	0	0	0
38	1	0	1	27	11	0	0	0	0	0.7105	0.2895	0	0	0	0
39	1	0	1	32	7	0	0	0	0	0.8205	0.1795	0	0	0	0
40	1	2	10	0	25	15	0	0	0	0	0.625	0.375	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
40	2	2	10	0	25	15	0	0	0	0	0.625	0.375	0	0	0
40	3	0	4	24	16	0	0	0	0	0.6	0.4	0	0	0	0
40	4	0	4	24	16	0	0	0	0	0.6	0.4	0	0	0	0
40	5	0	4	24	16	0	0	0	0	0.6	0.4	0	0	0	0
40	6	0	4	24	16	0	0	0	0	0.6	0.4	0	0	0	0
40	7	0	2	24	13	3	0	0	0	0.6	0.325	0.075	0	0	0
40	8	0	2	24	13	3	0	0	0	0.6	0.325	0.075	0	0	0
40	9	0	2	24	13	3	0	0	0	0.6	0.325	0.075	0	0	0
40	10	0	2	30	10	0	0	0	0	0.75	0.25	0	0	0	0
40	11	0	2	30	10	0	0	0	0	0.75	0.25	0	0	0	0
42	1	0	2	32	10	0	0	0	0	0.7619	0.2381	0	0	0	0
42	2	0	3	27	15	0	0	0	0	0.6429	0.3571	0	0	0	0
42	3	0	1	35	7	0	0	0	0	0.8333	0.1667	0	0	0	0
42	4	0	7	21	21	0	0	0	0	0.5	0.5	0	0	0	0
42	5	0	1	30	12	0	0	0	0	0.7143	0.2857	0	0	0	0
44	1	0	2	30	14	0	0	0	0	0.6818	0.3182	0	0	0	0
44	2	0	2	30	14	0	0	0	0	0.6818	0.3182	0	0	0	0
48	1	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0
48	2	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0
48	3	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0
48	4	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0
48	5	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
48	6	2	12	0	30	18	0	0	0	0	0.625	0.375	0	0	0
48	7	3	6	0	21	9	18	0	0	0	0.4375	0.1875	0.375	0	0
48	8	3	6	0	21	9	18	0	0	0	0.4375	0.1875	0.375	0	0
48	9	3	6	0	21	9	18	0	0	0	0.4375	0.1875	0.375	0	0
48	10	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	11	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	12	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	13	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	14	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	15	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	16	0	8	24	24	0	0	0	0	0.5	0.5	0	0	0	0
48	17	0	4	32	16	0	0	0	0	0.6667	0.3333	0	0	0	0
48	18	0	4	32	16	0	0	0	0	0.6667	0.3333	0	0	0	0
48	19	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	20	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	21	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	22	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	23	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	24	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	25	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	26	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	27	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
48	28	0	4	24	18	6	0	0	0	0.5	0.375	0.125	0	0	0
48	29	0	4	32	14	2	0	0	0	0.6667	0.2917	0.0417	0	0	0
48	30	0	4	32	14	2	0	0	0	0.6667	0.2917	0.0417	0	0	0
48	31	0	2	32	10	6	0	0	0	0.6667	0.2083	0.125	0	0	0
48	32	0	2	32	10	6	0	0	0	0.6667	0.2083	0.125	0	0	0
48	33	0	2	24	15	9	0	0	0	0.5	0.3125	0.1875	0	0	0
48	34	0	2	24	15	9	0	0	0	0.5	0.3125	0.1875	0	0	0
48	35	0	2	24	15	9	0	0	0	0.5	0.3125	0.1875	0	0	0
48	36	0	2	24	15	9	0	0	0	0.5	0.3125	0.1875	0	0	0
48	37	0	2	24	15	3	6	0	0	0.5	0.3125	0.0625	0.125	0	0
48	38	0	2	24	15	3	6	0	0	0.5	0.3125	0.0625	0.125	0	0
48	39	0	2	24	15	3	6	0	0	0.5	0.3125	0.0625	0.125	0	0
48	40	0	2	24	12	6	6	0	0	0.5	0.25	0.125	0.125	0	0
48	41	0	2	24	12	6	6	0	0	0.5	0.25	0.125	0.125	0	0
48	42	0	2	24	12	6	6	0	0	0.5	0.25	0.125	0.125	0	0
48	43	0	2	24	12	6	6	0	0	0.5	0.25	0.125	0.125	0	0
48	44	0	2	32	8	2	6	0	0	0.6667	0.1667	0.0417	0.125	0	0
48	45	0	2	32	8	2	6	0	0	0.6667	0.1667	0.0417	0.125	0	0
48	46	0	1	40	8	0	0	0	0	0.8333	0.1667	0	0	0	0
48	47	0	1	40	8	0	0	0	0	0.8333	0.1667	0	0	0	0
50	1	0	5	30	20	0	0	0	0	0.6	0.4	0	0	0	0
50	2	0	1	36	14	0	0	0	0	0.72	0.28	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
50	3	0	1	36	14	0	0	0	0	0.72	0.28	0	0	0	0
52	1	0	2	36	16	0	0	0	0	0.6923	0.3077	0	0	0	0
52	2	0	2	36	16	0	0	0	0	0.6923	0.3077	0	0	0	0
52	3	0	1	45	7	0	0	0	0	0.8654	0.1346	0	0	0	0
54	1	2	6	0	22	32	0	0	0	0	0.4074	0.5926	0	0	0
54	2	2	6	0	22	32	0	0	0	0	0.4074	0.5926	0	0	0
54	3	0	9	27	27	0	0	0	0	0.5	0.5	0	0	0	0
54	4	0	9	27	27	0	0	0	0	0.5	0.5	0	0	0	0
54	5	0	3	36	18	0	0	0	0	0.6667	0.3333	0	0	0	0
54	6	0	3	36	18	0	0	0	0	0.6667	0.3333	0	0	0	0
54	7	0	3	36	10	8	0	0	0	0.6667	0.1852	0.1481	0	0	0
54	8	0	1	36	10	8	0	0	0	0.6667	0.1852	0.1481	0	0	0
54	9	0	1	36	10	8	0	0	0	0.6667	0.1852	0.1481	0	0	0
54	10	0	1	39	15	0	0	0	0	0.7222	0.2778	0	0	0	0
54	11	0	1	39	15	0	0	0	0	0.7222	0.2778	0	0	0	0
54	12	0	1	39	15	0	0	0	0	0.7222	0.2778	0	0	0	0
55	1	0	1	48	7	0	0	0	0	0.8727	0.1273	0	0	0	0
56	1	2	14	0	35	21	0	0	0	0	0.625	0.375	0	0	0
56	2	2	14	0	35	21	0	0	0	0	0.625	0.375	0	0	0
56	3	0	4	36	20	0	0	0	0	0.6429	0.3571	0	0	0	0
56	4	0	4	36	20	0	0	0	0	0.6429	0.3571	0	0	0	0
56	5	0	4	36	20	0	0	0	0	0.6429	0.3571	0	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
56	6	0	4	36	20	0	0	0	0	0.6429	0.3571	0	0	0	0
56	7	0	2	36	17	3	0	0	0	0.6429	0.3036	0.0536	0	0	0
56	8	0	2	36	17	3	0	0	0	0.6429	0.3036	0.0536	0	0	0
56	9	0	2	36	17	3	0	0	0	0.6429	0.3036	0.0536	0	0	0
56	10	0	1	48	8	0	0	0	0	0.8571	0.1429	0	0	0	0
57	1	0	1	48	9	0	0	0	0	0.8421	0.1579	0	0	0	0
58	1	0	1	42	16	0	0	0	0	0.7241	0.2759	0	0	0	0
60	1	0	10	30	30	0	0	0	0	0.5	0.5	0	0	0	0
60	10	0	10	51	9	0	0	0	0	0.85	0.15	0	0	0	0
60	11	0	5	55	5	0	0	0	0	0.9167	0.0833	0	0	0	0
60	2	0	6	30	30	0	0	0	0	0.5	0.5	0	0	0	0
60	3	0	6	40	20	0	0	0	0	0.6667	0.3333	0	0	0	0
60	4	0	3	36	24	0	0	0	0	0.6	0.4	0	0	0	0
60	5	0	2	36	24	0	0	0	0	0.6	0.4	0	0	0	0
60	6	0	2	45	15	0	0	0	0	0.75	0.25	0	0	0	0
60	7	0	1	42	18	0	0	0	0	0.7	0.3	0	0	0	0
60	8	0	1	42	18	0	0	0	0	0.7	0.3	0	0	0	0
60	9	0	1	48	12	0	0	0	0	0.8	0.2	0	0	0	0
62	1	0	1	45	17	0	0	0	0	0.7258	0.2742	0	0	0	0
63	1	0	3	48	15	0	0	0	0	0.7619	0.2381	0	0	0	0
63	2	0	3	48	15	0	0	0	0	0.7619	0.2381	0	0	0	0
64	1	1	64	0	64	0	0	0	0	0	1	0	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
64	2	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	3	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	4	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	5	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	6	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	7	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	8	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	9	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	10	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	11	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	12	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	13	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	14	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	15	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	16	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	17	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	18	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	19	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	20	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	21	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	22	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	23	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	24	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	25	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	26	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	27	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	28	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	29	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	30	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	31	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	32	4	2	0	13	15	12	24	0	0	0.2031	0.2344	0.1875	0.375	0
64	33	4	2	0	13	15	12	24	0	0	0.2031	0.2344	0.1875	0.375	0
64	34	4	2	0	13	15	12	24	0	0	0.2031	0.2344	0.1875	0.375	0
64	35	4	2	0	13	15	12	24	0	0	0.2031	0.2344	0.1875	0.375	0
64	36	4	2	0	13	15	12	24	0	0	0.2031	0.2344	0.1875	0.375	0
64	37	4	2	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	38	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	39	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	40	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	41	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	42	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	43	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	44	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	45	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	46	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	47	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	48	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	49	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	50	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	51	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	52	5	2	0	19	3	6	12	24	0	0.2969	0.0469	0.0938	0.1875	0.375
64	53	5	2	0	19	3	6	12	24	0	0.2969	0.0469	0.0938	0.1875	0.375
64	54	5	2	0	19	3	6	12	24	0	0.2969	0.0469	0.0938	0.1875	0.375
64	55	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	56	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	57	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	58	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	59	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	60	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	61	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	62	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	63	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	64	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	65	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	66	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	67	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
64	68	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	69	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	70	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	71	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	72	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	73	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	74	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	75	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	76	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	77	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	78	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	79	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	80	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	81	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	82	2	8	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	83	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	84	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	85	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	86	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	87	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	88	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	89	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
64	90	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	91	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	92	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	93	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	94	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	95	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	96	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	97	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	98	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	99	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	100	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	101	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	102	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	103	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	104	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	105	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	106	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	107	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	108	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	109	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	110	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	111	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	112	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	113	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	114	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	115	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	116	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	117	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	118	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	119	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	120	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	121	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	122	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	123	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	124	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	125	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	126	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	127	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	128	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	129	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	130	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	131	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	132	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	133	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	134	3	2	0	16	18	30	0	0	0	0.25	0.2813	0.4688	0	0
64	135	3	2	0	16	18	30	0	0	0	0.25	0.2813	0.4688	0	0
64	136	3	2	0	16	18	30	0	0	0	0.25	0.2813	0.4688	0	0
64	137	3	2	0	16	18	30	0	0	0	0.25	0.2813	0.4688	0	0
64	138	3	2	0	16	30	18	0	0	0	0.25	0.4688	0.2813	0	0
64	139	3	2	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	140	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	141	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	142	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	143	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	144	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	145	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	146	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	147	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	148	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	149	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	150	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	151	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	152	3	2	0	16	12	36	0	0	0	0.25	0.1875	0.5625	0	0
64	153	3	2	0	16	12	36	0	0	0	0.25	0.1875	0.5625	0	0
64	154	3	2	0	16	12	36	0	0	0	0.25	0.1875	0.5625	0	0
64	155	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	156	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	157	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	158	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	159	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	160	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	161	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	162	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	163	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	164	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	165	3	4	0	19	21	24	0	0	0	0.2969	0.3281	0.375	0	0
64	166	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	167	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	168	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	169	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	170	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	171	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	172	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	173	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	174	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	175	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	176	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	177	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
64	178	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	179	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	180	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	181	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	182	3	4	0	16	24	24	0	0	0	0.25	0.375	0.375	0	0
64	183	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	184	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	185	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	186	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	187	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	188	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	189	4	4	0	22	6	12	24	0	0	0.3438	0.0938	0.1875	0.375	0
64	190	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	191	4	2	0	16	12	12	24	0	0	0.25	0.1875	0.1875	0.375	0
64	192	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	193	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	194	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	195	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	196	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	197	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	198	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	199	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	200	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0
64	201	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0
64	202	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	203	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	204	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	205	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	206	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	207	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	208	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	209	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	210	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	211	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	212	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	213	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	214	2	8	0	28	36	0	0	0	0	0.4375	0.5625	0	0	0
64	215	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	216	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	217	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	218	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	219	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	220	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	221	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	222	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	223	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	224	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	225	2	4	0	22	42	0	0	0	0	0.3438	0.6563	0	0	0
64	226	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	227	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	228	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	229	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	230	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	231	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	232	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	233	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	234	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	235	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	236	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	237	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	238	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	239	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	240	2	4	0	25	39	0	0	0	0	0.3906	0.6094	0	0	0
64	241	2	4	0	19	45	0	0	0	0	0.2969	0.7031	0	0	0
64	242	2	4	0	19	45	0	0	0	0	0.2969	0.7031	0	0	0
64	243	2	4	0	19	45	0	0	0	0	0.2969	0.7031	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	244	2	4	0	19	45	0	0	0	0	0.2969	0.7031	0	0	0
64	245	2	4	0	19	45	0	0	0	0	0.2969	0.7031	0	0	0
64	246	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	247	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	248	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	249	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0
64	250	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	251	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	252	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	253	3	8	0	28	12	24	0	0	0	0.4375	0.1875	0.375	0	0
64	254	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	255	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	256	3	4	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	257	3	2	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	258	3	2	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	259	3	2	0	22	18	24	0	0	0	0.3438	0.2813	0.375	0	0
64	260	1	64	0	64	0	0	0	0	0	1	0	0	0	0
64	261	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	262	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	263	2	16	0	40	24	0	0	0	0	0.625	0.375	0	0	0
64	264	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0
64	265	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
64	266	2	4	0	34	30	0	0	0	0	0.5313	0.4688	0	0	0
64	267	1	64	0	64	0	0	0	0	0	1	0	0	0	0
66	1	0	11	33	33	0	0	0	0	0.5	0.5	0	0	0	0
66	2	0	3	45	21	0	0	0	0	0.6818	0.3182	0	0	0	0
66	3	0	1	48	18	0	0	0	0	0.7273	0.2727	0	0	0	0
68	1	0	2	48	20	0	0	0	0	0.7059	0.2941	0	0	0	0
68	2	0	2	48	20	0	0	0	0	0.7059	0.2941	0	0	0	0
68	3	0	1	60	8	0	0	0	0	0.8824	0.1176	0	0	0	0
70	1	0	7	42	28	0	0	0	0	0.6	0.4	0	0	0	0
70	2	0	5	45	25	0	0	0	0	0.6429	0.3571	0	0	0	0
70	3	0	1	51	19	0	0	0	0	0.7286	0.2714	0	0	0	0
72	1	2	18	0	45	27	0	0	0	0	0.625	0.375	0	0	0
72	2	2	18	0	45	27	0	0	0	0	0.625	0.375	0	0	0
72	3	2	18	0	45	27	0	0	0	0	0.625	0.375	0	0	0
72	4	2	18	0	45	27	0	0	0	0	0.625	0.375	0	0	0
72	5	0	12	36	36	0	0	0	0	0.5	0.5	0	0	0	0
72	6	0	12	36	36	0	0	0	0	0.5	0.5	0	0	0	0
72	7	0	12	36	36	0	0	0	0	0.5	0.5	0	0	0	0
72	8	0	12	36	36	0	0	0	0	0.5	0.5	0	0	0	0
72	9	0	6	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	10	0	6	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	11	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
72	12	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	13	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	14	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	15	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	16	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	17	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	18	0	4	48	24	0	0	0	0	0.6667	0.3333	0	0	0	0
72	19	0	6	36	27	9	0	0	0	0.5	0.375	0.125	0	0	0
72	20	0	6	36	27	9	0	0	0	0.5	0.375	0.125	0	0	0
72	21	0	6	36	27	9	0	0	0	0.5	0.375	0.125	0	0	0
72	22	0	6	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	23	0	6	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	24	0	3	48	15	9	0	0	0	0.6667	0.2083	0.125	0	0	0
72	25	0	2	54	18	0	0	0	0	0.75	0.25	0	0	0	0
72	26	0	2	54	18	0	0	0	0	0.75	0.25	0	0	0	0
72	27	0	2	54	18	0	0	0	0	0.75	0.25	0	0	0	0
72	28	0	2	60	12	0	0	0	0	0.8333	0.1667	0	0	0	0
72	29	0	2	60	12	0	0	0	0	0.8333	0.1667	0	0	0	0
72	30	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	31	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	32	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	33	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
72	34	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	35	0	2	48	21	3	0	0	0	0.6667	0.2917	0.0417	0	0	0
72	36	0	2	54	15	3	0	0	0	0.75	0.2083	0.0417	0	0	0
72	37	0	2	54	15	3	0	0	0	0.75	0.2083	0.0417	0	0	0
72	38	0	2	54	15	3	0	0	0	0.75	0.2083	0.0417	0	0	0
72	39	0	1	63	9	0	0	0	0	0.875	0.125	0	0	0	0
72	40	0	1	60	12	0	0	0	0	0.8333	0.1667	0	0	0	0
72	41	0	1	60	9	3	0	0	0	0.8333	0.125	0.0417	0	0	0
72	42	0	1	63	6	3	0	0	0	0.875	0.0833	0.0417	0	0	0
72	43	0	1	60	9	3	0	0	0	0.8333	0.125	0.0417	0	0	0
72	44	0	1	60	9	3	0	0	0	0.8333	0.125	0.0417	0	0	0
74	1	0	1	54	20	0	0	0	0	0.7297	0.2703	0	0	0	0
75	1	0	1	64	11	0	0	0	0	0.8533	0.1467	0	0	0	0
76	1	0	2	54	22	0	0	0	0	0.7105	0.2895	0	0	0	0
76	2	0	2	54	22	0	0	0	0	0.7105	0.2895	0	0	0	0
78	1	0	13	39	39	0	0	0	0	0.5	0.5	0	0	0	0
78	2	0	3	54	24	0	0	0	0	0.6923	0.3077	0	0	0	0
78	3	0	2	64	14	0	0	0	0	0.8205	0.1795	0	0	0	0
78	4	0	1	70	8	0	0	0	0	0.8974	0.1026	0	0	0	0
78	5	0	1	57	21	0	0	0	0	0.7308	0.2692	0	0	0	0
80	1	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0
80	2	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
80	3	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0
80	4	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0
80	5	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0
80	6	2	20	0	50	30	0	0	0	0	0.625	0.375	0	0	0
80	7	3	10	0	35	15	30	0	0	0	0.4375	0.1875	0.375	0	0
80	8	3	10	0	35	15	30	0	0	0	0.4375	0.1875	0.375	0	0
80	9	3	10	0	35	15	30	0	0	0	0.4375	0.1875	0.375	0	0
80	10	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	11	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	12	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	13	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	14	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	15	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	16	0	8	48	32	0	0	0	0	0.6	0.4	0	0	0	0
80	17	0	4	60	20	0	0	0	0	0.75	0.25	0	0	0	0
80	18	0	4	60	20	0	0	0	0	0.75	0.25	0	0	0	0
80	19	0	4	60	20	0	0	0	0	0.75	0.25	0	0	0	0
80	20	0	4	60	20	0	0	0	0	0.75	0.25	0	0	0	0
80	21	0	4	60	20	0	0	0	0	0.75	0.25	0	0	0	0
80	22	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	23	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	24	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
80	25	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	26	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	27	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	28	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	29	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	30	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	31	0	4	48	26	6	0	0	0	0.6	0.325	0.075	0	0	0
80	32	0	2	48	20	12	0	0	0	0.6	0.25	0.15	0	0	0
80	33	0	2	48	20	12	0	0	0	0.6	0.25	0.15	0	0	0
80	34	0	2	48	20	12	0	0	0	0.6	0.25	0.15	0	0	0
80	35	0	2	48	20	12	0	0	0	0.6	0.25	0.15	0	0	0
80	36	0	2	60	14	6	0	0	0	0.75	0.175	0.075	0	0	0
80	37	0	2	60	14	6	0	0	0	0.75	0.175	0.075	0	0	0
80	38	0	2	60	14	6	0	0	0	0.75	0.175	0.075	0	0	0
80	39	0	2	60	14	6	0	0	0	0.75	0.175	0.075	0	0	0
80	40	0	2	48	17	9	6	0	0	0.6	0.2125	0.1125	0.075	0	0
80	41	0	2	48	17	9	6	0	0	0.6	0.2125	0.1125	0.075	0	0
80	42	0	2	48	17	9	6	0	0	0.6	0.2125	0.1125	0.075	0	0
80	43	0	2	48	17	9	6	0	0	0.6	0.2125	0.1125	0.075	0	0
80	44	0	2	48	23	3	6	0	0	0.6	0.2875	0.0375	0.075	0	0
80	45	0	2	48	23	3	6	0	0	0.6	0.2875	0.0375	0.075	0	0
80	46	0	2	48	23	3	6	0	0	0.6	0.2875	0.0375	0.075	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
80	47	0	1	72	8	0	0	0	0	0.9	0.1	0	0	0	0
81	1	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	2	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	3	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	4	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	5	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	6	2	9	0	33	48	0	0	0	0	0.4074	0.5926	0	0	0
81	7	3	3	0	17	16	48	0	0	0	0.2099	0.1975	0.5926	0	0
81	8	3	3	0	17	16	48	0	0	0	0.2099	0.1975	0.5926	0	0
81	9	3	3	0	17	16	48	0	0	0	0.2099	0.1975	0.5926	0	0
81	10	3	3	0	17	16	48	0	0	0	0.2099	0.1975	0.5926	0	0
82	1	0	1	60	22	0	0	0	0	0.7317	0.2683	0	0	0	0
84	1	0	14	42	42	0	0	0	0	0.5	0.5	0	0	0	0
84	2	0	14	42	42	0	0	0	0	0.5	0.5	0	0	0	0
84	3	0	7	56	28	0	0	0	0	0.6667	0.3333	0	0	0	0
84	4	0	6	54	30	0	0	0	0	0.6429	0.3571	0	0	0	0
84	5	0	6	54	30	0	0	0	0	0.6429	0.3571	0	0	0	0
84	6	0	4	64	20	0	0	0	0	0.7619	0.2381	0	0	0	0
84	7	0	4	64	20	0	0	0	0	0.7619	0.2381	0	0	0	0
84	8	0	2	70	14	0	0	0	0	0.8333	0.1667	0	0	0	0
84	9	0	2	70	14	0	0	0	0	0.8333	0.1667	0	0	0	0
84	10	0	2	60	24	0	0	0	0	0.7143	0.2857	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
84	11	0	2	60	24	0	0	0	0	0.7143	0.2857	0	0	0	0
84	12	0	1	69	15	0	0	0	0	0.8214	0.1786	0	0	0	0
84	13	0	1	72	12	0	0	0	0	0.8571	0.1429	0	0	0	0
86	1	0	1	63	23	0	0	0	0	0.7326	0.2674	0	0	0	0
88	1	2	22	0	55	33	0	0	0	0	0.625	0.375	0	0	0
88	2	2	22	0	55	33	0	0	0	0	0.625	0.375	0	0	0
88	3	0	4	60	28	0	0	0	0	0.6818	0.3182	0	0	0	0
88	4	0	4	60	28	0	0	0	0	0.6818	0.3182	0	0	0	0
88	5	0	4	60	28	0	0	0	0	0.6818	0.3182	0	0	0	0
88	6	0	4	60	28	0	0	0	0	0.6818	0.3182	0	0	0	0
88	7	0	2	60	25	3	0	0	0	0.6818	0.2841	0.0341	0	0	0
88	8	0	2	60	25	3	0	0	0	0.6818	0.2841	0.0341	0	0	0
88	9	0	2	60	25	3	0	0	0	0.6818	0.2841	0.0341	0	0	0
90	1	0	15	45	45	0	0	0	0	0.5	0.5	0	0	0	0
90	2	0	5	60	30	0	0	0	0	0.6667	0.3333	0	0	0	0
90	3	0	5	60	30	0	0	0	0	0.6667	0.3333	0	0	0	0
90	4	0	9	54	36	0	0	0	0	0.6	0.4	0	0	0	0
90	5	0	9	54	36	0	0	0	0	0.6	0.4	0	0	0	0
90	6	0	3	63	27	0	0	0	0	0.7	0.3	0	0	0	0
90	7	0	1	66	24	0	0	0	0	0.7333	0.2667	0	0	0	0
90	8	0	1	66	24	0	0	0	0	0.7333	0.2667	0	0	0	0
92	1	0	2	66	26	0	0	0	0	0.7174	0.2826	0	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
92	2	0	2	66	26	0	0	0	0	0.7174	0.2826	0	0	0	0
93	1	0	1	80	13	0	0	0	0	0.8602	0.1398	0	0	0	0
94	1	0	1	69	25	0	0	0	0	0.734	0.266	0	0	0	0
96	1	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	2	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	3	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	4	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	5	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	6	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	7	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	8	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	9	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	10	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	11	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	12	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	13	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	14	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	15	2	24	0	60	36	0	0	0	0	0.625	0.375	0	0	0
96	16	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	17	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	18	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	19	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
96	20	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	21	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	22	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	23	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	24	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	25	3	12	0	42	18	36	0	0	0	0.4375	0.1875	0.375	0	0
96	26	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	27	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	28	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	29	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	30	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	31	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	32	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	33	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	34	2	12	0	42	54	0	0	0	0	0.4375	0.5625	0	0	0
96	35	2	6	0	51	45	0	0	0	0	0.5313	0.4688	0	0	0
96	36	2	6	0	51	45	0	0	0	0	0.5313	0.4688	0	0	0
96	37	3	6	0	33	27	36	0	0	0	0.3438	0.2813	0.375	0	0
96	38	3	6	0	33	27	36	0	0	0	0.3438	0.2813	0.375	0	0
96	39	3	6	0	33	27	36	0	0	0	0.3438	0.2813	0.375	0	0
96	40	3	6	0	33	27	36	0	0	0	0.3438	0.2813	0.375	0	0
96	41	3	6	0	33	27	36	0	0	0	0.3438	0.2813	0.375	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
96	42	4	6	0	33	9	18	36	0	0	0.3438	0.0938	0.1875	0.375	0
96	43	4	6	0	33	9	18	36	0	0	0.3438	0.0938	0.1875	0.375	0
96	44	4	6	0	33	9	18	36	0	0	0.3438	0.0938	0.1875	0.375	0
96	45	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	46	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	47	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	48	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	49	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	50	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	51	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	52	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	53	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	54	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	55	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	56	0	16	48	48	0	0	0	0	0.5	0.5	0	0	0	0
96	57	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	58	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	59	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	60	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	61	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	62	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	63	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
96	64	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	65	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	66	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	67	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	68	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	69	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	70	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	71	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	72	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	73	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	74	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	75	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	76	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	77	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	78	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	79	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	80	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	81	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	82	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	83	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	84	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	85	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
96	86	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	87	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	88	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	89	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	90	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	91	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	92	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	93	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	94	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	95	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	96	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	97	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	98	0	8	48	36	12	0	0	0	0.5	0.375	0.125	0	0	0
96	99	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	100	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	101	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	102	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	103	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	104	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	105	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	106	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	107	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
96	108	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	109	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	110	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	111	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	112	0	2	48	21	9	18	0	0	0.5	0.2188	0.0938	0.1875	0	0
96	113	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	114	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	115	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	116	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	117	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	118	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	119	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	120	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	121	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	122	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	123	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	124	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	125	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	126	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	127	0	4	48	30	6	12	0	0	0.5	0.3125	0.0625	0.125	0	0
96	128	0	4	48	24	12	12	0	0	0.5	0.25	0.125	0.125	0	0
96	129	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0

Generating Function for Groups of Order 100 or Less

	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
96	130	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	131	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	132	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	133	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	134	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	135	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	136	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	137	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	138	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	139	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	140	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	141	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	142	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	143	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	144	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	145	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	146	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	147	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	148	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	149	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	150	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	151	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
96	152	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	153	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	154	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	155	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	156	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	157	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	158	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	159	0	4	48	30	18	0	0	0	0.5	0.3125	0.1875	0	0	0
96	160	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	161	0	4	48	24	24	0	0	0	0.5	0.25	0.25	0	0	0
96	162	0	2	48	27	21	0	0	0	0.5	0.2813	0.2188	0	0	0
96	163	0	2	48	27	21	0	0	0	0.5	0.2813	0.2188	0	0	0
96	164	0	2	48	27	21	0	0	0	0.5	0.2813	0.2188	0	0	0
96	165	0	2	48	27	21	0	0	0	0.5	0.2813	0.2188	0	0	0
96	166	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	167	0	2	48	18	12	18	0	0	0.5	0.1875	0.125	0.1875	0	0
96	168	0	2	48	18	12	18	0	0	0.5	0.1875	0.125	0.1875	0	0
96	169	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	170	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	171	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	172	0	2	48	18	12	18	0	0	0.5	0.1875	0.125	0.1875	0	0
96	173	0	2	48	18	12	18	0	0	0.5	0.1875	0.125	0.1875	0	0

Generating Function for Groups of Order 100 or Less

$ G $	n	m	$ Z $	k_0	k_1	k_2	k_3	k_4	k_5	p_0	p_1	p_2	p_3	p_4	p_5
96	174	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	175	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	176	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	177	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	178	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	179	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	180	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	181	0	2	48	21	15	12	0	0	0.5	0.2188	0.1563	0.125	0	0
96	182	0	2	48	27	3	6	12	0	0.5	0.2813	0.0313	0.0625	0.125	0
96	183	0	2	48	18	6	12	12	0	0.5	0.1875	0.0625	0.125	0.125	0
96	184	0	2	48	27	3	6	12	0	0.5	0.2813	0.0313	0.0625	0.125	0
96	185	0	2	48	18	6	12	12	0	0.5	0.1875	0.0625	0.125	0.125	0
96	186	0	2	48	18	6	12	12	0	0.5	0.1875	0.0625	0.125	0.125	0
96	187	0	2	48	27	3	6	12	0	0.5	0.2813	0.0313	0.0625	0.125	0
96	188	0	2	48	18	6	12	12	0	0.5	0.1875	0.0625	0.125	0.125	0
96	189	0	8	64	32	0	0	0	0	0.6667	0.3333	0	0	0	0
96	190	0	2	80	16	0	0	0	0	0.8333	0.1667	0	0	0	0
96	191	0	8	64	32	0	0	0	0	0.6667	0.3333	0	0	0	0
96	192	0	2	80	16	0	0	0	0	0.8333	0.1667	0	0	0	0
96	193	0	8	64	32	0	0	0	0	0.6667	0.3333	0	0	0	0
96	194	0	2	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0
96	195	0	2	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0

Generating Function for Groups of Order 100 or Less

	IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
	96	196	0	8	64	28	4	0	0	0	0.6667	0.2917	0.0417	0	0	0
	96	197	0	2	80	12	4	0	0	0	0.8333	0.125	0.0417	0	0	0
	96	198	0	8	64	28	4	0	0	0	0.6667	0.2917	0.0417	0	0	0
	96	199	0	8	64	28	4	0	0	0	0.6667	0.2917	0.0417	0	0	0
	96	200	0	8	64	28	4	0	0	0	0.6667	0.2917	0.0417	0	0	0
	96	201	0	2	80	12	4	0	0	0	0.8333	0.125	0.0417	0	0	0
	96	202	0	1	80	10	6	0	0	0	0.8333	0.1042	0.0625	0	0	0
	96	203	0	1	80	10	6	0	0	0	0.8333	0.1042	0.0625	0	0	0
	96	204	0	1	21.958	1.5417	0.5	0	0	0	0.2287	0.0161	0.0052	0	0	0
	96	205	0	2	64	19	13	0	0	0	0.6667	0.1979	0.1354	0	0	0
	96	206	0	2	80	11	5	0	0	0	0.8333	0.1146	0.0521	0	0	0
	96	207	0	2	64	19	13	0	0	0	0.6667	0.1979	0.1354	0	0	0
	96	208	0	4	64	16	4	12	0	0	0.6667	0.1667	0.0417	0.125	0	0
	96	209	0	4	64	16	4	12	0	0	0.6667	0.1667	0.0417	0.125	0	0
	96	210	0	4	64	16	4	12	0	0	0.6667	0.1667	0.0417	0.125	0	0
	96	211	0	2	64	13	7	12	0	0	0.6667	0.1354	0.0729	0.125	0	0
	96	212	0	4	64	16	4	12	0	0	0.6667	0.1667	0.0417	0.125	0	0
	96	213	0	4	64	16	4	12	0	0	0.6667	0.1667	0.0417	0.125	0	0
	96	214	0	2	64	13	7	12	0	0	0.6667	0.1354	0.0729	0.125	0	0
	96	215	0	2	64	13	7	12	0	0	0.6667	0.1354	0.0729	0.125	0	0
	96	216	0	1	68	10	6	12	0	0	0.7083	0.1042	0.0625	0.125	0	0
	96	217	0	4	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0

Generating Function for Groups of Order 100 or Less

IGI	n	m	Z	k ₀	k ₁	k ₂	k ₃	k ₄	k ₅	p ₀	p ₁	p ₂	p ₃	p ₄	p ₅
96	218	0	4	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0
96	219	0	2	64	14	18	0	0	0	0.6667	0.1458	0.1875	0	0	0
96	220	0	2	64	14	18	0	0	0	0.6667	0.1458	0.1875	0	0	0
96	221	0	4	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0
96	222	0	4	64	20	12	0	0	0	0.6667	0.2083	0.125	0	0	0
96	223	0	2	64	14	18	0	0	0	0.6667	0.1458	0.1875	0	0	0
96	224	0	1	68	10	18	0	0	0	0.7083	0.1042	0.1875	0	0	0
98	1	0	7	63	35	0	0	0	0	0.6429	0.3571	0	0	0	0
98	2	0	1	72	26	0	0	0	0	0.7347	0.2653	0	0	0	0
98	3	0	1	72	26	0	0	0	0	0.7347	0.2653	0	0	0	0
100	1	0	10	60	40	0	0	0	0	0.6	0.4	0	0	0	0
100	2	0	10	60	40	0	0	0	0	0.6	0.4	0	0	0	0
100	3	0	5	75	25	0	0	0	0	0.75	0.25	0	0	0	0
100	4	0	2	72	28	0	0	0	0	0.72	0.28	0	0	0	0
100	5	0	2	72	28	0	0	0	0	0.72	0.28	0	0	0	0
100	6	0	2	72	28	0	0	0	0	0.72	0.28	0	0	0	0
100	7	0	2	72	28	0	0	0	0	0.72	0.28	0	0	0	0
100	8	0	1	84	16	0	0	0	0	0.84	0.16	0	0	0	0
100	9	0	1	90	10	0	0	0	0	0.9	0.1	0	0	0	0
100	10	0	1	90	10	0	0	0	0	0.9	0.1	0	0	0	0
100	11	0	1	87	13	0	0	0	0	0.87	0.13	0	0	0	0
100	12	0	1	90	10	0	0	0	0	0.9	0.1	0	0	0	0