Primary mathematical skills in Egypt and England

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APPENDIX (I)

Primary arithmetical curriculum framework for 1916

First year	Second year	Third year
Counting until 9. Mental addition not exceeding 9. Subtraction not exceeding 9, reading the number until 9. Division of number into equal parts from 2-9, writing, reading numbers to 100. The four rules in money, simple multiplication and simple division based on addition and subtraction using simple numbers.	Multiplication table to 9 x 9. Reading, writing the numbers to 10000. Addition, subt. multiplication provided that the multiplier not more than 9. Division, provided that the divisor not more than 5. multiplication provided that the multiplier not more than 99. Simple multiplication by 10, 20, 30, to 90. Exercises of the four rules in money, weight, and measurements.	Simple division provided that the divisor not more than 9, simple long division of numbers more than 12. Multiplication tables to 12 x12. Simple multiplication and division on 10, 11, 12. simple division by 20, 30, 40 to 90. Reading, writing the numbers to a million. Simple multi., and division of 100 and its double-times. Addition, subtraction, division, the simple fractions.

Fourth year
Addition, subt. multiplication, and division of the simple decimals Egyptian money, weights, measurements. Transfer from one units to another. The four rules in it. Transfer English pound to Egyptian money. Meter as Egyptian measurement, Kilogram and its relationship to Oka. The area of square, rectangle, triangle, and parallelogram. The cubic Meter, Litre, exercises on measurements at home

APPENDIX (II)

Primary arithmetical curriculum framework for 1925

First year	Second year	Third year
All the simple operations which on the numbers from 1 to 50 such as measurements, comparison, ratio, fraction going through the following order of difficulty. Place value-identifying for example the value of the 4 in 43 and the 3 in 43 as 4 tens and 3 units. Practice the operations of addition and subtraction. Knowing half of simple numbers, small and large numbers. Simple Ration. Meaning of zero.	Counting the previous work with numbers to 200. Using tools such as the meter rule and scales. Addition, vertically and horizontally. An difficulty. collecting tens, provided that the result of addition was not exceeding 200. Subtraction subtrahend not exceeding 200.The teacher not to start subtraction with borrowing unless subtraction without borrowing is understood. Multiplication 9x9 multiply two single figure numbers, followed by two figure numbers multiplied by one figure number. Division applications of division, provided that the divisor does not exceed 12	Numbers up to 1000 and explanation of the way of reading the numbers. Studying the multiplication and divisions and its signs. Division by factors and understanding of remains. Subtraction operations with realizing the subtrahend and its applications. General application on the four rules with using weight, measurements, money to understand the meaning of fraction.

Fourth year	Fifth year
Reading and writing numbers not exceeding five figures. Divisibility by 2, 3, and 5. Prime numbers and analysis of non prime number not exceeding 100. Analysis of multiples of ten up to 100. Common multiple. Fractions- distinguish between decimals and proper fractions. Cancelling of fractions. Addition, multiplication, subtraction and division of fractions. Changing decimals fractions to common fractions and converse. properties of square, triangle and their areas	Measurements of length, weight, money and time including fractions and operations with fractions. Ratio in fraction form. Simple proportion. A*/B=C*/D then AD=BC. Finding one of the previous four if three are known. Exercises on simple proportion. Percentage and its application to interest, profit, and lost. Simple interest. Proportional Division. Applications of mathematics to relationships with practical life. Properties of known Geometrical shapes and their area, such as circle, triangle, and practical applications.

APPENDIX (III)

Primary arithmetical curriculum framework for 1930

First year	Second year	Third year
Counting from 1-100. Reading, writing to 9.- Reading and writing to 1000. Mental addition and subtraction of numbers not exceeding 20. Oral and written simple exercises on addition not exceeding 1000 of numbers where the sum does not exceed 1000 and subtraction of numbers less than 1000.	Reading and writing to 1000. Mental and written exercises on addition and subtraction. Simple multiplication of numbers to 9x9. Multiplication of a number of two figure and more by a one figure number, the product not exceeding 10000. Multiplying numbers by 10, 20, 30, to 90. Simple exercises of multiplication. Egyptian money.	Reading and writing to million. Exercises of addition and subtraction. Multiplication to 12x12. Exercises on addition, subtraction and multiplication. Multiplication:- Simple multiplication by 10, 100, 1000, 10000. Simple division by numbers less than 10. Division by multiples of 10. Long division: Four rules exercises. Measurements of time. Division by factors.

Fourth year	Fifth year
Prime factors. Divisors. Common multiples and their calculation. Fractions, proper fraction. The four rules with fractions. Decimal fractions. Reading decimal fractions. The four rules with decimal fractions Exercises on Egyptian, English and French measurements.	Changing measurements from one system to another. e.g. French money into Egyptian money. Egyptian and French weights into others. Fedan as unit to measure agricultural land and its units. Percentage and interest. Simple interest. General exercises related to commercial; industrial and agricultural affairs.

Primary geometrical curriculum framework for 1930

Simple geometry in Fourth year	Simple geometry in Fifth year
Point. Drawing and measuring straight lines; measurements by looking and estimating first then by ruler. Triangle, square, rectangle, parallelogram. Circles area, centre, diameter, radius and perimeter. Intersection of lines. Angles (measurements and drawing). Construction of parallel lines.	Type of triangle by angles and lengths of sides. Construction of triangles. Quadrilaterals. Polygon (regular, non regular). Constructing quadrilaterals. The area of triangle, square, rectangle, parallelogram and circle. Simple exercises on carpets, lands measurements etc. Surface area of some solids e.g Cube, prism, cone, pyramid.

APPENDIX (IV)

Primary arithmetical curriculum framework for 1937

First year	Second year	Third year
Counting objects to 9. Writing and reading to 9. Addition of numbers work sum up to 9. Subtraction. Measuring small length by hand, foot, steps and making comparisons 1 as half of 2, and 2 as the double of 1. Simple fractions Studying the number to 200. Counting and writing to 100. Counting twos, fives, and tens. Deduction of multiplication table for 2, 5, and 10. Adding numbers not exceeding two figures with no carrying. Subtraction of numbers not exceeding two figures and without borrowing. Addition of numbers not exceeding two figures with carrying.	Measurements exercises. Reading and writing to 9999. Adding with sum not exceeding 4 figures. Subtraction with and without borrowing. Multiplication tables to 9x9. Multiplying two figure numbers by one figure and by 10, 100, and 1000. and by 20, 30, 40 up to 90. Simple division by numbers not exceeding 5. An Egyptian pound and parts.	Simple division, the divisor not exceeding 9. Simple long division on numbers exceeding 12. Multiplication tables up to 12x12 Simple multiplication and division by 10, 11 12, simple division to million. Simple multiplication and division by 100 and 1000, 10000,et Time measurements. Exercises related to home life. Common multiple. Fractions. The four rules with proper fraction.

Fourth year
Decimal fraction. The four rules with decimal fractions. Egyptian measurements and the four rules with weights, years and months. Proportional numbers. Application of proportion on area of land such as Fedan, kirat, and sahm. Percentages. Area of square, rectangle, triangle. Exercises.

Practical geometry and worksheet for framework in 1937

First year	Second year	Third year	Fourth year
Hand work activities. 1-Dry and wet sand. 2-Plasticine 3-Coloured paper.	Hand work: Plasticine modelling of fruits and vegetables. Tell story with plasticine models. Coloured paper: Geometrical shapes. Decorative patterns. Expressing stories. Free activity: toys etc.	Practical geometry and hand work: using natural materials from the environme--nts to make something useful such as chairs, etc, Explain the different types of writing. Ideas about angles and geometric--al shapes. Circle, trian--gle, square shape, using sand and plasticine to make models of useful things in the environment.	Hand work and geometry. Using environ--ments objects to aid understanding of geometrical information. Practising to draw square, rectangle and triangle with given sides using string and nails. Graphs. Free activity with hard paper and environmental objects.

APPENDIX (V)

The differences in Obligatory schools are given for 1937

First year	Second year	Third year
The same as elementary school scheme.	The same as elementary school scheme with one difference omitting the Egyptian pound and its parts.	Adding Egyptian pound and its parts. Time measurements. Analysis of numbers into elementary factors and common multiples. Fraction. Meaning of fraction and the four rules on proper fractions.

Fourth year	Fifth year
The straight line. Curves, acute obtuse reflex angles. Multiplication and division of numbers of more than two figures. Measurements by ruler and ribbon. Time and weight measurements. Surface shapes. Triangle, square, rectangle, circle. Types and analysis of numbers into factors. The lowst common multiple. Fractions. The four rules on fractions	Graphical scale. Simple decimal fraction. The four rules with decimal fractions. The area of square, rectangle and triangle. Weight measurements. Area units and Zraa, Kasaba, Fadan (which only to be used for land). Year; the four rules on proportional numbers. Percentage, interest.

APPENDIX (VI)

Primary arithmetical curriculum framework for 1947

First year	Second year	Third year
Studying, reading and writing numbers to 10. Comparison, ratio and fractions Measuring lengths by hand, foot, etc. Studying numbers to 20. Counting to 100 in twos, threes, and fives. Vertical addition of numbers with answer not exceeding two figures. Vertical subtraction of numbers not exceeding two figures without borrowing.	Numbers 1-100 with explanation of the different place values of numbers. Reading and writing to 200. Addition not exceeding 200. Subtraction without borrowing and with borrowing from the tens and hundreds and writing to 1000. Addition provided that the sum does not exceed 1000. Subtraction; minuend not exceeding 1000 with borrowing from tens and hundreds. Addition and subtraction of three figure numbers. Counting from 0 to 50. Multiplication table to 5x10. Simple addition, subtraction and division exercises not exceeding three steps. Egyptian money (Kersh, Malleem, Geny).	Vertical and horizontal addition of three numbers its answer not exceeding 100. Subtraction of numbers not exceeding 100. Oral addition of three numbers. Exercises on counting from 0 to 100. Multiplication table 10x15. Addition in groups to 1000. Using multiplication table in order to facilitate division. Multiplying two figure numbers by one figure numbers. Reading and writing of numbers not exceeding 10000. Multiplying by 10, 20, 30, 100, 200, 900. Multiplying three figure numbers by one figure numbers. Simple division of two figure numbers by one figure numbers. Simple division by 10. Pound weight, meter, kintar. Pound money. Week day. Explanation of fractions, reading & writing of fractions.

Following APPENDIX (VI)

Primary arithmetical curriculum framework for 1947

Fourth year	Fifth year	Sixth year
Writing numbers not exceeding six figures. vertical Addition and subtraction. Division. Multiplication table up to 12*12. Simple division by numbers not exceeding 12. Division by 20,.., 900. Meaning, writing and reading of proper fractions. Changing in proper fractions to whole numbers. Simple division. The four rules with fractions. Addition and subtraction with proportional numbers. Decimal fractions. The place value of numbers. Addition and subtraction of decimal fractions. Division and multiplication of decimal fractions.	Extension of multiplication and division of integral numbers. Long division of integral and decimal number by integral number. Divisibility by 10, 5, 2, 3. Prime numbers from 1-50. Analysis of non prime numbers from 1-50 into two factors. Lowest common multiple of two or more numbers. Addition and subtraction of proper fractions. Changing proper fractions into decimal fractions. The four rules with money and weight. Multiplication and division of proportional number by one figure numbers.	Ratio and its forms. Graphical scales. Simple proportion. Proportional division. Percentage. Time measurements. Simple interest. Areas of square. Egyptian area units. Areas of triangle and rectangle. Volumes (cube)-volume measurements. French weights. Transfer Egyptian volumes into litres. The volume of parallelepiped.

APPENDIX (VI)

The practical geometry framework for 1947

Fifth year	Sixth year
Meaning of straight line and curve. Using ruler to measure lines. Drawing staight lines of a given length. Naming the straight line e.g. AB. Circle. Perimeter. Centre. Diameter. Chord. Arc. Drawing circles given their radius. Angle types. Measurements with protractor. Construction of right angled Triangles. Sides. Edge. Angles. Recognition of the kind of triangle by its angles and lengths of sides.	The area of right angled triangle. The height of triangle. Area of non right angled triangle. Area of triangle by its base and height. Constructing triangles knowing two sides and one angle, and one side and two angles. Parallel lines. Drawing parallel lines using setsquare and ruler. Drawing squares, rectangle and parallelogram of given sides. Areas of square, and rectangle.

APPENDIX (VI)

In 1949, the arithmetical and practical geometry framework curriculum scheme was the same as for 1947.

APPENDIX (VII)

Primary arithmetical curriculum framework for 1953

First year	Second year	Third year
1-Understanding the value of number practically. 2-Training pupil to make different groups practically not exceeding 10. 3-Train pupil to make addition and subtraction examples from their own practical life to be understood. 4-Common exercises which relate to the children's needs. 5-Simple addition and subtraction. 6-Addition of numbers with sum not exceeding 10. And addition of two numbers with sum not exceeding two figures. Using measurements, weights, money which are related to the children's needs.	Studying three figures numbers gradually. Understanding the place value of numbers. Extending study which is related to practi-cal life-weight, money, measurements, time Form numerical groups practically in order to under-stand multiplica-tion tables. Mental arithmetic-al problems and application to common practical aspects such as how many 5 in 20 in order to facilitate understanding the meaning of division and practising it.	Deducting multipl-ication tables using the multipl-ication sign (x), instead of repeat-ing with arithme-tical examples. Practising of exercises which derive gradually from simple arith-metical mental exercises to contain more simple operation such as division by one figure numbers and use of multiplication tables. Extension of addition and subtraction exercises using numbers with answer not exceeding 3-4 figures. practical exercises on weight, measurements and time, using this to increase practice of multiplication. Tables, multiply by 10, 20,..., 100 and simple division.

		Multiplication and division of two or three figure numbers by one figure numbers. Understanding the meaning of fraction and its value practically. Using these fractions in simple mental exercises. Practising in writing and reading fractions.

APPENDIX (VII)

Primary arithmetical curriculum framework for 1953

Fourth year	Fifth year	Sixth year
Using simple division with one figure numbers. Understanding the meaning of the division sign and practising its use. Solving exercises involving multiplication of two or three figure numbers with sufficient practice the meaning of numerator and denominator of a fraction. Cancelling fractions. Mixed fractions. Addition of fractions with different denominator. Addition and subtraction on proportional numbers. The meaning, value, writing and reading of decimal fractions, with addition and subtraction. Multiplication and division of a decimal fraction by one figure whole number.	Long division of integral numbers with and without remainders. Long division of an integral or decimal number by integral numbers, using realistic exercises. Extension of fractions; practising more advanced operations in addition and subtraction of fractions with different denominators. Multiplication and division of a fraction by a whole number. Multiplication and division of proper fractions. Extension of decimal fractions. Changing proper fractions into decimal and converse. Multiplication and division of decimal fractions. Measurement, money and weight units. Changing from one unit to another et of measurements and weight in proportional number. Multiplication and division of proportional	Ratio and proport-ional division. Ratio meaning. The relationship between its divine methods of writing ratio. Its importance on practical life. Graphical scale. Proportional division and starting with (begin with) integral numbers from practical examples. Percentages: Its meaning, its importance and understanding its meaning. Converting ratio to percentages. Finding percentage of a given amount- Simple exercises on interest, taxes Simple interest. Studying time. Counting number of days in the months Calculating interest rate time and principle in simple interest problems. Measurements of Egyptian area. Volumes of cube and parallelepiped Volume measurements. French weights. Changing Egyptian units into litre and converse.

Practical geometry in fifth year	Practical geometry in sixth year
Drawing and measuring staight lines, circle, angles, triangles and right angled triangle by knowing the two sides which contain the right angle.The right angled triangle by its side lengths. The type of triangle related to its angles and sides.	Parallel lines, square, rectangle, triangle. Area of right angled triangle. The area of non right angled triangle. Finding the area of triangle by its base and height.

APPENDIX (VIII)

Primary arithmetical curriculum framework for 1959

First year Six lessons in a week.	Second year Six lessons in a week.	Third year Six lessons in a week.
1-Identifying and studying numbers with using concrete objects from practical life. 2-Composition of number such as 2&4 and 3&3 and 5&1 and 2&2&2 the all make 6 provided that these groups not exceeding 10. 3-Practising the addition and subtraction. 4-Using interesting exercises. 5-The place value of number of two figure numbers. 6-Simple addition of two figure numbers provided that its sum not exceeding two figure numbers. 7-Using measurement units, weight and money in appropriate occasions.	1-Continuous studies of the previous year then gradually come to the numbers which not exceeding three figure numbers with understanding the place value of numbers. 2-Increasing practical aspects such as weight, measurements, times and dealing with money and using the last units in practising or simple addition and subtraction. 3-Children learn how to know the time from 8.am to afternoon for example. 4-Using multiplication table in a simple way such as how many five in twenty in order to facilitate understanding division.	1-Continuous studies of the previous year numbers. 2-Deducting multiplication table and using the sign of (x) instead of"repeat" by using practical examples and simple mental exercises. 3-Enlargements on addition and subtraction provided that the production not exceeding three or four figure number and gradually exercises derive from one step to two steps using weight, measurements and Egyptian money to practising such as Egyptian pound and its units, Meter and centimetre, pound and ounce, week, day, hour, minutes, and studying these

		relation to increase practising on multiplication table and multiply and division by 10, 20, 100. 4-Make pupils practise on multiply two or three figure numbers by one figure number and so division. 5-Understanding the meaning of fraction and its value practically such as 1/2 (half of an orange) or 1/4 (quarter of an orange) and using simple mental exercises to explain and practise it. General exercises.

Primary arithmetical curriculum framework for 1959

Fourth year Five lessons in a week.	Fifth year Five lessons in a week.	Sixth year Five lessons in a week.
1-Gradually, pupils come to use simple division by one figure number with understanding the sign (/). 2-Enlargements on exercises which need multiply by two or three figure numbers. 3-Exercises contain simple proper fraction by using concrete objects in order to make children understanding the meaning of fraction numerator and denominator of a fraction. In addition to put fraction in a simple way. Cancelling fractions. 4-Using measurements weights, etc..... a- as it used as proportional numbers and do addition and subtraction and making the sums of addition and subtraction on proportional numbers in a simple form. Using meter and kilometre, pound in	1-Solving more advanced exercises than that studied before. 2-Using oral arithmetic to review concepts which were studied before. 3-Long division of integral or decimal numbers by an integral number provided that its sum not exceeding three decimal numbers. Study begin with exercises drove from real life. 4-Enlargements on fraction study. These studies make reading, writing, addition, and subtraction of proper fraction more understanding 5-Gradually teacher moved to more advanced exercises which contained addition and subtraction of different denominator fractions. Lowst common multiplication. 4-Enlargements on studying the decimal fraction by reviewing	1-Reviewed of last lessons with taken into consideration weight, money and measurements units and area. Then application of multiplication and division. 2-Ratio and proportional number. Meaning and how to write them. 3-Percentage its meaning. Changing ratio to percentages and converse. Applications of percentage to profit and lost. 4-Calculating simple interest. 5-Volumes: Parallelepiped and cube volume. Volume measurement Cubic meter. Cubic decimetre. Cubic centimetre. 6-Making tables to compare different measurements of weight, length, and money. 7-General exercises to measure pupils' abilities of doing arithmetical operations. 8-Avoiding complex exercises.

understanding decimal fractions and its meaning and value, then using addition and subtraction on decimal numbers and also multiplied and divided it by one figure number. 5-More concerning to make practical exercises which are involved in real life in order to make them more comprehensible by children.	previous studies in that subject then moved to study transferation from one fraction into another with relating that by weights and measurements and money units. Using English& French measurements and transfer them into Egyptian units. Square, rectangle and triangle area. Simple idea about means.	

Practical geometry in fifth year	Practical geometry in sixth year
Drawing and measuring staight lines. Drawing and measuring straight lines with a given length. Angles: measuring of angle, identifying different types of angles. Using protractor to measure angles. Drawing right angle using setsquare and ruler. Explain meaning of perpendicular lines. Constructing perpendiculars on straight lines. Dropping a perpendiculars to straight lines. Drawing parallel lines square and rectangle, then finding their area. Triangle Its types with concerning angles and sides length. Right angled triangle. Calculating area of triangle.	1-revision of last year lessons in that subject. 2-Triangle: its types constructing a triangle by knowing side length and two sides lengths and an angle in between. 3-Using geometrical methods in drawing parallelogram. Finding area of any square shape by dividing it into two triangles and finding the area of each ones. 4-Circle: knowing and understanding centre, chord perimeter, radius and diameter of a circle. 5-Graphical scale: Its applications to read maps and representing statistics lots of exercises. Applications of graphical scale to relationships with practical life.

APPENDIX (IX)

Primary arithmetical curriculum framework for 1960

First year Six lessons in a week.	Second year Six lessons in a week.	Third year Six lessons in a week.
1-Sorting and classifying objects into sets. 2-Material: a box of marbles or shells.3-Counting the number of objects in a set. 4-Composition of numbers up to 10. 5-Addition and subtraction. Any addition statement such as 5+2=7 occurs in a great variety of situations and can be recorded in several ways. 6-Experience of varied aspects of the operations of addition, subtraction as these arise in the real situations of the classroom. It is called these processes "operations" because, in the first instance, they are (or should) be actions performed on real materials in natural situations which arise in the environment.	1-Extension of number knowledge to include three figure numbers. 2-Experiences leading to an understanding of the number system and place value. 3-Applications of the number system to the real world. Measurement: Experiences with money, weight, and measures will continue throughout this year, experiences increasing in scope and variety. Similar experience can be planned for time. 4-Once children have acquired this facility with numbers, however, they are ready to benefit from written practice in addition and subtraction, first with tens and units and then with larger numbers as they come to extend their number	1-After children having their knowledge about counting the number of objects in a set, sorting and classifying objects into sets, composition of numbers, place value, and simple addition and subtraction, then comes the next stage of emphasising the understanding of previous studies by deducting multiplication tables and using sign (x) instead of (times) which normally come within the experience of young children. 2-Mental and practical exercises of simple division by one figure number. 3-Extension of addition and subtraction exercises of numbers its sums more than three or four figures.

7-Adding and subtracting numbers less than 100 in both cases with or without carrying and borrowing. 8-Measurements and money. Experiences which involve measurement probably provide the most varied mathematical opportunities for young children. Simple knowledge of the relationships between one unit and another (the common units of weights and measures which normally come within the experience of young children). 9-Number relationships from 1 to 5.	knowledge to numbers greater than 100. 5-Simple multiplication and division, such as how many 5 in 20? and also which is equivalent to "four fives"..etc. 6-Exercises on "doubles" of numbers from 5 to 10. 7-Exercises on "three times" of numbers from 1 to 5.	4-Begin with exercises contain one idea and are solved by one step, then gradually comes to those which need two steps, as these arise in the real situations of the classroom. 5-Applications of the number system to the real world. Measurement, experience with money, weights and measures will continue during this year. Metric system. Clock arithmetic. 6-Multiplication and division by 10 20, 30,...,100. 7-Multiply two or three figure numbers by one figure numbers. 8-Understanding the meaning of division by one figure number. 9-General exercise

Primary arithmetical curriculum framework for 1960

Fourth year Five lessons in a week.	Fifth year Five lessons in a week.	Sixth year Five lessons in a week.
1-Extension of number knowledge to include multipl--ication of two or three figures by one figure numbers. 2-So far the children's knowledge of number has been mainly concerned with whole numbers (integers) which they first used to describe situations in their environm--ent and later learned to combine in different ways according to the operation demanded by the specific problem in hand when they meet the written symbols for fractions, they are experiencing for the first time, pairs of numbers used in a different way; number pairs which appear to behave differently from integers when combined by any of the operations addition, subtract--ion, multiplicati--on and division. The symbolic way of	1-Extension of number knowledge to include more advanced exercises with solving these exercises easely and accurately. 2-Diagnosis child's weaknesses in operating four arithmetical operations. 3-Oral arithmetic. 4-General revision 5-Long division for both cases, that is ended by integral number and the other ended by 3 figures decimal numbers. 6-Extension of ideas of number to include fractions. Varied aspects of the operations of addition, subtrac--tion, multiplica--tion and division with fractions as these arise in the real situations of the classroom. 7-Measurement will provide many opportunities for work with fraction and in the use of the four operatio--ns applied to	1-Revision. 2-Ratio, proportion and rate. It is often used the concept of ratio to compare two (or more) numbers or quantities. 3-The child's recording of his work whether oral, written, expressed by a diagram or by a graph, must be his own. 4-Percentages. Children began to turn fractions to decimals and at this stage the teacher told them about percentages. 5-Applications of percentages to interest, profit, lose and the real world. 6-Calculat--ing interest, rate, time and principle in simple interest problem. 7-Solid the volume of a cube and parallelepiped. Solid measurements e.g the cubic of Meter, decimetre, centimetre, etc...

writing fractions. A variety of regul-ar geometric shap-es (in two colours) is often used for giving children varied opportunities for recognising the common fractions. Simple fraction of everyday life. Experience with money, weights and measures lengths. These varied exper-iences should cover the operatio-ns of addition, subtraction, multi-plication and division. The comm-on units of weigh-ts and measures which normally come within the ex-perience of young children. Applicat-ions of mathemati-cs to relationshi-ps with practical life.	fractions.8-Exten-sion of decimal fractions. It is important that the four operations with decimal frac-tions should ari-se from their use in real situations not exceeding three figure deci-mal numbers. Weights, money and measures provide varied experience in the use of simple fractions. 9-Applications of the number system to the real world: a-Measurement. b-Metric system. c-Money. 10-Areas Squares and rectangles. 11-A simple idea on average.	8-Concrete experi-ence of all kinds of measurements and use of money, length, weight, time. 9-Applicati-ons of mathemati-cs. The use of the environme-nt in all aspects of measuring and money.

Practical geometry for the Fifth year	Practical geometry for the Sixth year
Drawing, measuring and understanding the ideas of 1-Straight lines. 2-Angles. 3-Triangles.	1-Revision. 2-Type of triangle by angles and lengths of sides. Constructing a triangle by given two sides and one angle in between. Then constructing a triangle by given one side and two angles. 3-Constructing parallelogram by measuring, then finding the area of a parallelogram and a triangle when children divided a parallelogram into two equal triangles along its diagonal. 4-The area of a triangle, circle, centre, perimeter, radius and diameter. Constructing a circle with a given radius or diameter. Graphical scales. Applications of the graphical scale to the real world.

APPENDIX (X)

School framework scheme for 1963

First year: Six lessons a week

1-Study the numbers from 1 to 100. Figures from 1 to 9. Composition of numbers from 2 to 9 with addition and subtraction. Tens. Zeros. 2-The meaning of addition and subtraction signs (+,-,=). Adding two numbers with and without carrying (The sums not exceeding two figure numbers). Subtracting two numbers with and without borrowing (The remainder not exceeding two figure numbers). 3-Money and lengths measurement. Study the relationships of an Egyptian pound units and Syrian money. Meter and centimetre. 4-Practice on doubles numbers from 1 to 5.

Second year: Six lessons a week

1-Revision. 2-Place value of three figure numbers. 3-Practice on addition and subtraction. Adding two numbers without and with carrying. Subtracting two numbers without and with borrowing (The sum or remainder not exceeding three figure numbers). 4-Metric measurements and money. Relationships of an Egyptian pound units. Relationships of a metric

system units. Weight. 5-Time. Relationships between an hour and a minute. Clock. 6-Sorting and classifying objects into groups of numbers in order to understand multiplication table. Doubles numbers from 5 to 10. Three times the numbers from 1 to 5.

Third year: Six lessons a week

1-Revision. 2-Reading and writing four figure numbers. 3-The sum of addition and subtraction not exceeding four figure numbers. 4-Multiplication. Meaning of the sign (x). Studying and practising on multiplication table. Multiple by 10, 20,...,100. Two or three figure numbers multiplied by one figure number. 5-Division. Meaning of the sign (/). Division as the inverse of multiplication. Simple ended division by one figure numbers. Ended division by 10, 20,...,100. 6-The metric system and money. Knowledge of the relationships between one unit and another. An Egyptian pound units. A Syrian money units. Meter units. Kilogram units. 7-Time: the relationships between; week and day, day and hour. Simple proportion.

Fourth year: Five lessons a week

1-Revision. 2-Extension of number knowledge to include reading and writing five or six figure numbers. 3-Multiplication. Two figure numbers multiplied by one figure numbers. Three figure numbers multiplied by one figure number. 4-Fractions. Writing and reading with understanding the meaning of numerator and denominator of a fraction. Addition and subtraction of fractions whose the same denominator. Cancelling of fractions. Meaning of inproper fractions. Addition and subtraction of fractions whose different denominators. 5-Decimal fractions. Meaning, writing and reading decimal fractions. Addition and subtraction with decimal fractions. Multiply one decimal fraction by one figure integer numbers. Ended division of one integer figure numbers. 6-The metric system and money. An Egyptian pound units. A Syrian money units. Meter units. Kilogram units.

Fifth year: Five lessons a week

1-Revision. 2-Long division. Ended division of integral numbers. Non ended division of integral numbers, out of division not exceeding three decimal figures fraction. Ended division of one decimal

fraction by one integral numbers. Non ended division of one decimal fraction by one integral number (out of division not exceeding three decimal figures fraction. Proportion. Applications of the proportion to the time measurements. 3-Proper fractions. Divisibility by simple numbers. Analysis of numbers. Multiplication and division of fractions. Cancelling of fractions. Simple common multiple. Adding and subtracting fractions. Exercises. 4-Decimal fractions. Changing proper fractions into decimal. Multiplication, division and general application of decimal fractions. 5-Area. The areas and properties of a square and a rectangle. 6-Mean. 7-A simple idea of straight and curved lines. Using geometrical tools. 8-Angles. Using protractor to measure and draw angles. 9-Using geometrical tools to do: constructing the right angle by using ruler and sets square. Constructing perpendiculars on a given straight line. Dropping perpendicular to a given straight line. Drawing parallel lines by using sets square and ruler. Construction of a square with given side length. Construction of a rectangle with given two sides length. 10-Triangle. Types of triangle according to its angles and sides length. Constructing equal sides triangle with a given side. Constructing a right angled triangle with two given sides.

Constructing a triangle with three sides length. Heights of triangles.

Sixth year: Five lessons a week

1-Revision. 2-Ratio. 3-Proportion and rate. Applications of the number system to the real world: Ratio proportion and rate. Proportion meaning. Finding its dividend. Proportional division. Simple exercises. 3-Percentages. The importance of percentage. Changing ratio into percentages. Finding percentage of a certain amount. Percentage and its application to interest profit, and lose. 4-Calculating simple interest, rate, time, and principle in simple interest problems. Applications of mathematics to relationships with practical life. 5-Solids. (a) The volume and properties of a cube. (b) Volume measurements (cubic meter, decimetre, and centimetre). Applications and simple exercises to relationships with practical life. 6-Parallelogram. Concept, properties and area of a parallelogram. 7-Triangle. Constructing a triangle with given two sides and angle in between. Constructing a triangle with a given side and two angles. The area of a triangle (= half of a parallelogram whose the same base and height). Area of any quadrilateral shape (by dividing it into two triangles). 8-Circle:

perimeter, centre, diameter and radius of a circle. Construction of a circle with a given its radius using compass. Made some simple circlar decorations. Drawing some regular shape inside a circle. 9-Graphical scale. Its importance and applications to relationships with practical life using block graphs, etc....

APPENDIX (XI)

School framework scheme for 1965

First year: Five lessons a week

(i) Studying numbers from 1 to 100. This study included: a- Numbers from 1 to 9. B- Composition of numbers from 2 to 9. C- Tens. D- Two figure numbers. F- zero.

(ii) Addition and subtraction : a- Meaning of signs (+, -, =). B- Adding without carrying. C- Subtracting without borrowing. D- The sum or remainder of adding or subtracting two numbers with carrying or borrowing not exceeding two figure numbers.

(iii) Number relationships Using money units.

(iv) Hundreds Using money units and metric system.

(v) Practice on double numbers from 1 to 10.

Second year: Five lessons a week

(i) Revision. (ii) Place value of three or four figure numbers. Using an Egyptian pound units. Metric system units. (iii) Addition and subtraction. Adding without and with carrying. Subtract without and with borrowing (The sum or remainder in both

cases not exceeding four figure numbers). (iv) Time. Relationships on time units. Reading clock. (v) Sorting and classifying objects into groups of numbers in order to understand multiplication table. Multiplication table of 5. General applications.

Third year: Five lessons a week

(i) Revision. (ii) Extension of number knowledge to include reading and writing five or six figure numbers. (iii) The sum or remainder of addition or subtraction not exceeding five or six figure numbers. (iv) Multiplication. Meaning the sign (x). Multiplication table. Multiplication by 10, 20,.., 100. Multiply two or three figure numbers by one figure numbers followed by two figure numbers then by three figure numbers. (v) Division. Meaning of the sign (/). Division as the inverse of multiplication. Simple division by 10, 20, ..., 100. Divisibility by 2, 3, 5, 11. (vi) Practice on multiplication and division by using an Egyptian pound units, metric system units, time units. (vii) Fractions. Meaning, reading, writing, addition and subtraction of proper fraction. Decimal fractions. Meaning, reading, writing, addition and subtraction of decimal fractions. Drawing and measuring straight lines.

Fourth year: Five lessons a week

(i) Revision. (ii) Decimal fractions. Extension of number knowledge to include reading, writing, and simple four rules with decimal fractions gradually. (iii) Proper fractions. Cancelling fractions. Changing fractional numbers into an integral number and a fraction. Adding and subtracting fractions which have different denominator. Number analysis. Cancelling fractions. Multiplication and division with fractions. Simple common multiple. Adding and subtracting different denominator fractions. General applications. Long ended devision by two figure number. (iv) Geometry. Angle: Meaning and drawing an angle by using protractor. Constructing a triangle with a given two sides lengths and an angle in between.

Fifth year: Five lessons a week

(i) Revision. (ii) Extension of division to include ended division of integral and decimal numbers. (iii) Proportion. The four rules with proportion. (iv) Decimal fractions. Changing proper fractions into decimal fractions and converse. Multiplication, division, and applications of decimal fractions. (v) Mean: Exercises from real life. (vi) Areas: The

areas of square and rectangle. Volumes: volume of a cube and a parallelepiped. (vii) Geometry. Using geometrical tools (ruler, right angled setsquare, protractor). Constructing a right angle. Constructing a perpendicular on a straight line. Dropping perpendicular to a straight line. Constructing parallel lines. Constructing a square, rectangle and right angled triangle.

Sixth year: Five lessons a week

(i) Revision. (ii) Approximation to nearest unit, ten, hundred and not exceeding three figure numbers with decimal fraction. (iii) Ratio, proportion and rate. Meaning and writing the ratio and proportion. Applications of proportion and rate to the real life. (iv) Percentages: Meaning of percentage. Changing a ratio into a percentage. Finding a percentage of a certain amount. Applications to include interest, taxis, lose, etc,... (v) Calculating interest rate, time and principle in simple interest problems. (vi) Areas: Areas of a parallelogram and a triangle. (vii) Geometry. Revision. Using geometrical tools. Constructing a circle with a given radius. Constructing chords of a circle. Constructing a triangle by its three sides lengths. Constructing equal sides triangle (Equilateral) by its side.

Constructing an equal two sides triangle (Isosceles) by one side and two angles.

APPENDIX (XII)

School framework scheme for 1967

First year:

(i) Studying numbers from 1 to 100. Composition of numbers from 2 to 9. Tens. Two figure numbers. Zero. (ii) Addition and subtraction. Meaning of the sign (+, -, =). Adding two numbers without and with carrying. Subtracting two numbers without and with borrowing. (The sum and difference not exceeding two figures). (iii) Number relationships. Using an Egyptian pound units. Hundreds to 900. Doubles numbers from 1 to 10.

Second year:

(i) Revision. (ii) Extension of numbers to three and four figure numbers. Place value. Using an Egyptian pound units, and metric system. (iii) Addition and subtraction. Adding and subtracting two numbers without and with carrying and borrowing. (The sum and difference not exceeding four figure numbers). (iv) Time. (v) Introduction to multiplication table up to 5.

Third year:

(i) Revision. (ii) Reading and writing five and six figure numbers. (iii) Addition and subtraction. The sum and difference not exceeding five or six figure numbers. (iv) Multiplication. Meaning of the sign (x). Multiplication by 10, 20,..., 100. Multiply two or three figure numbers by one figure, two figures, and three figure numbers. (v) Division. Meaning of (/). Division by by 10, 20, 30,..., 100. Divisibility by 2, 3, 5, and 11. (vi) Using an Egyptian pound units, time and metric system. (vii) Simple fractions. Decimal fractions. Addition and subtraction of fractions with equal denominators. (viii) Drawing and measuring straight lines with given their lengths.

Fourth year:

(i) Revision. (ii) Decimal fractions. Addition and subtraction of decimal fractions. Multiplication and division of a decimal fraction by a unit number. (iii) Proper fractions. Cancelling fractions. Conversion of common fractions to decimals. Addition and subtraction of fractions with different denominators. Multiplication and division of fractions. Full practical knowledge and experience

of all fractions. Long division by two figure numbers. (iv) Geometry. Angle. Adentifying, drawing and measuring angles by using protractor. Constructing a triangle with given two sides and an angle in between.

Fifth year:

(i) Revision. (ii) Long division for integral or decimal numbers. (iii) Proportion. The four rules with proportion. (iv) Decimal fractions. Conversion of common fractions to decimals. Multiplication, division and full practical knowledge and experience of decimal fractions. (v) Mean. (vi) Areas. Practical experience of square, and rectangle. Volume. Calculation of volume of cube and parallelepiped. (vii) Geometry. Using geometrical tools (ruler, right angle setsquare and protractor). Drawing a right angle. Constructing perpendicular on straight line. Dropping perpendicular to straight line. Constructing parallel lines. Constructing square, rectangle and right angled triangle.

Sixth year:

(i) Revision. (ii) Approximation to a unit, ten, hundred and three decimal figures. (iii) Ratio,

proportion and rate. Writing and reading the ratio. Graphical scale. Meaning of proportion. Proportional lengths. Full practical knowledge and experience of proportion. (iv) Percentage. Conversion of ratio to percentage. Full practical knowledge and experience of percentage. Interest, profit and lose. (v) Calculating a simple interest. General applications. (vi) Areas. Calculating the areas of triangle and parallelogram. (vii) Geometry. Revision. Constructing a parallelogram, circle by its radius, chord of a circle, triangle by its sides, triangle by one side and two angles, and heights of triangles.

APPENDIX (XIII)

School framework scheme for 1971

First year: Six lessons a week

(i) Studying numbers from 1 to 9. Composition of numbers from 2 to 9. Meaning of sign (+, -, =). (ii) Studying numbers from 10 to 100. Tens. Two figure numbers. Zero. Place value. Adding two numbers without and with carrying. Subtracting two numbers without and with borrowing. (iii) Studying hundreds to 900. (iv) Double numbers from 1 to 10.

Second year: Six lessons a week

(i) Revision. (ii) Extension of numbers to three and four figures. Place value. Using an Egyptian pound units and metric system units. Practicing on addition and subtraction. (iii) Time. Tell the time. Full practical knowledge and experience of seconds, minutes and hours. (iv) Multiplication. Meaning of multiplication sign (x). Full practical knowledge and experience of multiplication table to table 5.

Third year: Six lessons a week

(i) Revision. (ii) Extension of numbers to five and six figures or more. (iii) Practicing on addition and subtraction. (iv) Multiplication. Multiplication table to table 10. Multiplication by 10, 20,..., 100. Multiply two or three figure numbers by one figure, two figures and three figure numbers exclussively. (v) Division. Meaning of division sign (/). Simple division by 10, 20, 30, ..., 100. Simple division by one figure. Practicing on multiplication and division. Using an Egyptian pound units, metric system units and time.

Fourth year: Six lessons a week

(i) Revision. (ii) Long division by two figures. (iii) Proper fractions. Meaning, reading and writing proper fractions. Conversion of improper fractions to mixed numbers. Addition and subtraction of fractions with equal denominators. Addition and subtraction of fractions with different denominators. (iv) Divisibility by 2, 3, 4, 5, and 11. (v) Cancelling fractions. Multiplication and division with fractions. Simple lowst common multiple mathematical handling of everyday situations. (vi) Decimal fractions. Meaning, reading, and writing

decimal fractions. Addition and subtraction with decimals. Multiplication and division of decimals by an integral numbers. (vii) Geometry. Drawing and measuring straight lines from length measurements. Angle. Identifying and drawing angles by using protractor. Drawing a triangle with given two sides and an angle in between. Deducting the fact that the sum of an angles triangle equal = 180 degree.

Fifth year: Six lessons a week

(i) Revision. (ii) Long division. Division of integral numbers with no remainder. Division of decimals by an integral numbers. (iii) Proportion. The four rules with proportional numbers. (iv) Decimal fractions. Revision of proper and decimal fractions. Conversion of common fractions to decimals with no remainder. Multiplication and division of decimals. Full practical knowledge and experience of decimals. (v) Mean. Mathematical handling of everyday situations. (vi) Areas. Calculation of areas of squares and rectangles. (vii) Geometry. Using geometrical tools such as ruler, right angled triangle or setsquare and protractor. Drawing right angle. Constructing a perpendicular on straight line. Dropping a perpendicular to straight line. Drawing parallel

lines. Drawing a square by its side. Drawing a rectangle by its two sides. Drawing a right angled triangle by two right angle sides.

Sixth year: Six lessons a week

(i) Revision. (ii) Approximation for units, tens, and hundred, also to three figure decimals. (iii) Practicing long division with three figure decimals in remainder. (iv) Ratio, proportion and rate. Meaning, reading and writing ratio. Graphical scale. Applications of ratio and proportion to practical life. (v) Percentages. Meaning of ratio. Finding percentage of an amount. Applications of percentage to real life, interest, profit, taxes and lose. Time etc. (vi) Volume. Volume of cube and parallelpiped. (vii) Graphical scale. (viii) Geometry. Revision. The areas of a triangle and parallelogram using geometrical tools. Drawing a circle by its radius. Drawing the chord of a circle. Constructing a parallelogram by two sides and an angle in between. Constructing triangles by a side and two angles, three sides. Constructing equilateral triangle by its side. Drawing the heights of a triangle.

APPENDIX (XIV)

A content analysis of the contemporary school scheme books for 1983

The first primary school book (Traditional mathematics)

CONTENT

Numbers.

CONCEPTS ARE INVOLVED

(i) Bigger than. (ii) Smaller than. (iii) Numbers (1 to 9). (iv) Addition. (v) Equivalent. (vi) Commutative law. (vii) Subtraction. (viii) The ascending order. (ix) The descending order. (x) Zero. (xi) Composition of two figure numbers. (xii) The place value of numbers.

FACTS

The relationships of an Egyptian pound units.

THE EXPECTED SKILLS

(i) Reading, writing and recognition of numbers from 1 to 9. (ii) Operate the ascending and descending order on the above mentioned numbers. (iii) Operate addition without and with carrying. (iv) Operate subtraction without and with borrowing using the line

of numbers.

CONTENT

Knowledge of solid shapes.

CONCEPTS ARE INVOLVED

(i) Parallelepiped. (ii) Cube. (iii) Cylinder. (iv) Sphere. (v) Pyramid. (vi) The straight line.

FACTS

The relationships among the metric system.

THE EXPECTED SKILLS

(i) The understanding of 3'D geometrical solids.

(ii) Measuring a straight line by ruler.

The second primary school book (Traditional mathematics)

CONTENT

Numbers.

CONCEPTS ARE INVOLVED

(i) Three figure numbers. (ii) Four figure numbers. (iii) Even numbers. (iv) Odd numbers.

FACTS

(i) The relationships of an Egyptian pound units. (ii) The relationships of the metric system. (iii) Full knowledge of the relationship between hours and minutes. (iv) Even number +, - even number = even number. (v) Odd number +, -, odd number = even number.

THE EXPECTED SKILLS

(i) Reading and writing three figure numbers. (ii) Place value in three figure numbers. (iii) Addition and subtraction of three figure numbers. (iv) Five times table, number bonds. (v) Telling the time in a quarter hour. (vi) Reading and writing four figure numbers. (vii) Addition and subtraction of four figure numbers.

CONTENT

Surfaces and solid shapes.

CONCEPTS ARE INVOLVED

(i) The surface. (ii) The plane surface (iii) The curved surface.

FACTS

The relationships between Kilometre, meter and centimetre.

THE EXPECTED SKILLS

Volume and surface area of solid shapes, which were studied in the first year. Practical experience of circles, squares, rectangles, triangles, especially as used in pattern work.

A content analysis of the third year primary school book (Traditional mathematics)

CONTENT

Numbers

CONCEPTS ARE INVOLVED

(i) Five figure numbers. (ii) Six figure numbers.

FACTS

(i) Numbers have multiplied by 10 and one figure number. Zero (0). (ii) Numbers multiplied by 100, have the unit and tens figures. (iii) The relationships between year and month. (iv) Multiplication table facts up to 10 x 10.

THE EXPECTED SKILLS

(i) Reading, writing and the operations of addition and subtraction on the five and six figure numbers. (ii) Multiplication and division up to 10 times table. (iii) Multiplication of three figure numbers.

CONTENT

Geometry.

CONCEPTS ARE INVOLVED

Perimeters

FACTS

(i) Perimeter of a square = side length x 4. (ii) Perimeter of a rectangle = (length + width) x 2.

THE EXPECTED SKILLS

(i) Calculation of perimeter of squares and rectangles. (ii) Drawing straight lines from length measurements (of a given length). (iii) Measuring straight lines of given lengths.

A content analysis of the fourth year primary school book (Traditional mathematics)

CONTENT

Numbers

CONCEPTS ARE INVOLVED

(i) Common (proper) fraction. (ii) Improper fraction. (iii) Decimals. (iv) A prime number. (v) The lowest common multiple.

FACTS

(i) Tests for divisibility by 2, 5 and 3. (ii) The four rules with proper and decimal fractions.

THE EXPECTED SKILLS

(i) Cancelling fractions. (ii) The four rules with proper and decimal fractions along with full understanding of the meaning.

CONTENT

Geometry

CONCEPTS ARE INVOLVED

(i) Angles. (ii) Right angle. (iii) Acute angle. (iv) Obtuse angle.

FACTS

(i) The angle sum of a triangle = 180 degree.

THE EXPECTED SKILLS

(i) Construction of an angle equal to a given angle using compass and ruler. (ii) Measuring angles with protractor. (iii) Constructing triangles knowing two sides and angle between them. (iv) Recognizing the type of a triangle by its angles. (v) Recognizing the type of a triangle by lengths sides.

A content analysis of the fifth year primary school book (Traditional mathematics)

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Approximations. (ii) The mean. (iii) The positive rational numbers.

FACTS

(i) The mean of a set of quantities is total of the set of quantities divided by number of quantities. (ii) Total of a set of quantities = mean x quantities of numbers.

THE EXPECTED SKILLS

(i) Approximation to nearest whole, ten hundred, thousand and to one, two and three decimal places. (ii) Operating the four rules with two, three and four figure numbers. (iii) Full practical knowledge and experience of mean. (iv) Finding the total of a set of quantities given its mean.

CONTENT

Geometry

THE CONCEPTS ARE INVOLVED

(i) Area. (ii) Perpendicular lines. (iii) Parallel lines.

FACTS

(i) Area of a square = length side x itself. (ii) Area of rectangle = length x width. (iii) The relationship between square untis e.g square cm, sq. Meter, sq. Millimetre. (iv) The relationships between an Egyptian land measurements e.g Fidan, Kirate, Sahem, Kasaba and meter.

THE EXPECTED SKILLS

(i) Constructing perpendiculars on straight lines using sets square and ruler. (ii) Dropping perpendiculars to straight lines using setsquare and ruler. (iii) Drawing parallel lines using setsquare and ruler. (iv) Drawing squares and rectangles using rulers measuring setsquare or protractor. (v) Calculation of the area of squares and rectangles. (vi) Conversion of area units, cm square, dm square, meter square.

A content analysis of the sixth year primary school book (Traditional mathematics)

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Ratio (ii) Proportion. (iii) Percentage.

FACTS

(i) Graphical scale = the length on graph divided by real length. (ii) Simple interest = principle x rate x years.

THE EXPECTED SKILLS

(i) Finding the scale of graph, length in the graph and real length. (ii) Conversion of proper fractions to percentage and vice versa. (iii) Conversion of percentage to decimals. (iv) Full practical knowledge and experience of percentage in taxes, sales and purchases etc.... (v) Calculating interest, rate, time and principle in simple interest problems. (vi) Tabulating graphical data.

CONTENT

Geometry

THE CONCEPTS ARE INVOLVED

(i) Parallelogram. (iii) Regular shapes. (iii) Centre, diameter and chord of a circle. (iv) Intersection of lines.

FACTS

(i) The perimeter of a parallelogram = (total of the two adjacent sides) x 2. (ii) The area of a parallelogram = base x heigth. (iii) The area of a triangle = half of the base x height. (iv) The volume of a cube = side x side x side. (v) The parallelepiped volume = length x width x heigth = area of base x height. (vi) The surface area of sides = base perimeter x heighth. (vii) The total area = the surface area of sides + the two base area.

THE EXPECTED SKILLS

(i) Constructing a triangle by knowing side length and two angles. (ii) Constructing a triangle by given three sides lengths. (iii) Drawing a circle by knowing its radius. (iv) Drawing a chord with a given length inside circle. (v) Constructing a parallelogram by measuring. (vi) Constructing regular shapes inside circles. (vii) To be able to explain and describe perpendiculars, reflex angles and rectangles etc...

Secondly a content analysis for primary modern mathematics

A content analysis of the first primary school book (modern mathematics)

CONTENT

Sets

THE CONCEPTS ARE INVOLVED

(i) Set (ii) Element. (iii) Membership. (iv) Subset. (v) Breakdown (into classes, categories, etc...). (vi) Equivalent sets. (vii) The empty set. (viii) Symmetry.

THE EXPECTED SKILLS

(i) The realization of common charcteristic of set element. (ii) Classification of sets. (iii) Breakdown sets into subsets. (iv) Practicing to realize and write the number of set element.

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Number from 1 to 9. (ii) Zero. (iii) Addition. (iv) Equivalent. (v) Ascending order. (vi)

Descending order. (vii) Subtraction. (viii) Substitution. (ix) Multiplication. (x) Division. (xi) Two figure numbers. (xii) The place value of number.

FACTS

(i) The relationships among the Egyptian pound units e.g guinea, kerch and ten etc.... (ii) The composition of numbers.

THE EXPECTED SKILLS

(i) Reading and writing numbers from 1 to 9. (ii) Operate ascending and descending order. (iii) Operate addition and subtraction by using numbers's line. (iv) Commutative and associative properties of addition. (v) Understanding place value. (vi) Composition of numbers e.g 5 = 4+1 = 3+2 etc. (vii) Using addition table. (viii) Multiplication of numbers under ten. (ix) Adding two figure numbers without and with carrying. Subtracting two figure numbers without and with borrowing.

CONTENT

Equations and inequalities.

CONCEPTS ARE INVOLVED

(i) Unknown variable. (ii) Equation. (iii) The

linear equation with one unknown. (iv) Inequalities e.g 5›2. (v) Smaller than ‹. (vi) Bigger than ›. (vii) Inequalities with one unknown e.g x + 3 › 7.

THE EXPECTED SKILLS

(i) Solving the linear equation with one unknown. (ii) Solving inequalities with one unknown e.g x + 2 ‹ 9.

CONTENT

Geometry

CONCEPTS ARE INVOLVED

(i) Square. (ii) Rectangle. (iii) Triangle. (iv) Circle. (v) 3'D shapes (solids). (vi) Cube. (vii) Cylinder. (viii) Cone. (ix) Pyramide. (x) Ball (sphere). (xi) Parallelepiped. (xii) Point. (xiii) Rays. (xiv) The sector, the segment. (xv) The straight line.

FACTS

(i) The relationships between meter and centimetre.

THE EXPECTED SKILLS

(i) Properties of and relationships between plane shapes and solids. (ii) Drawing and identifying straight lines. (iii) The understanding of 3-D geometrical solids.

A content analysis of the second primary school book (modern mathematics)

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) The three figure numbers. (ii) Even number. (iii) Odd number. (iv) Four figure numbers.

FACTS

(i) Multiplication tables. (ii) Tests for divisibility by 2, 3, 5, and 10. (ii) Full practical knowledge and experience of relationships between cm, dm, meter.

THE EXPECTED SKILLS

(i) Reading and writing three figure numbers. (ii) Addition and subtraction of three figure numbers. (iii) Reading and writing four figure numbers. (iv) Addition and subtraction of four figures. (v) Multiplication. Using square numbers and number line.

CONTENT

Geometry

CONCEPTS ARE INVOLVED

(i) Diameter. (ii) Prarllelism. (iii) Intersection of lines. (iv) Perpendiculars. (lines at right angle). (v) The plane. (vi) Curved surface. (vii) Perimeter. (viii) Radius of a circle. (ix) Parallelogram. (x) Trapezium.

FACTS

The relationships between kilometre and meter.

THE EXPECTED SKILLS

(i) Full practical knowledge of surfaces for 3-D solids e.g a cube has 6 square surfaces. (ii) Cube numbers. (iii) Volume. (iv) Measuring lines with a ruler. (v) Construction of perpendiculars (line at right angle). (vi) Construction of parallel lines. (vii) Practical experience of ractangle, triangle and parallelogram as used in pattern work. (viii) Drawing circle with a given radius.

A content analysis of the third primary school book (modern mathematics)

CONTENT

Sets

THE CONCEPTS ARE INVOLVED

(i) The universal set. (ii) The union of two sets. (iii) The intersection of two sets. (iv) Disjoint sets.

THE EXPECTED SKILLS

(i) Diagrams showing union and intersection of sets.

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Doubling numbers. (ii) Approximation.

FACTS

(i) Relationships of an Egyptian pound units and metric system units. (ii) The relationships between kilogram and tonne.

THE EXPECTED SKILLS

(i) Being able to double numbers. (ii) Approximation

to nearest whole, ten, hundredth, thousandth. (iii) Long division. (iv) The ability to tell the time.

CONTENT

Geometry

THE CONCEPTS ARE INVOLVED

(i) Angles. (ii) Acute, obtuse and reflex angles. (iii) Curves. (iv) Diameter, radius and chord of a circle.

FACTS

(i) Relationships between meter and millimetre.

THE EXPECTED SKILLS

(i) Finding the numbers of surfaces, edge and vertices of geometrical solids. (ii) Drawing perpendicular lines using ruler and setsquares. (iii) Drawing parallel lines using ruler and setsquares. (iv) Drawing a square and a triangle using setsquare and ruler.

A content analysis of the fourth primary school book (modern mathematics)

CONTENT

Sets

THE CONCEPTS ARE INVOLVED

(i) Inclusion. (ii) Intersecting sets. (iii) Inclusion of sets. Disjoint sets.

THE EXPECTED SKILLS

(i) Solving simple problems using Venn diagrams.

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Natural number. (ii) The addition identity element (zero). (iii) The multiplication identity element (one). (iv) Exponent of a power. (v) Common fraction. (vi) Proper fraction. (vii) Improper fraction. (viii) Prime number. (ix) The lowest common multiple. (x) Decimal.

FACTS

(i) For every two natural numbers A, B there is a natural number Y which is the sum of A and B. (ii)

For every natural number A-0 = A and A-A =0. (iii) For every two natural numbers A, B there is N a natural number which is product of A and B. (iv) For every natural number A. A x 0 = 0 and A x 1 = A. (v) Division A/B, may be applied on natural numbers only if the numerator A is a common multiple B. (vi) For every natural number A, A/1 = A. A/A = 1. (vii) The four rules on natural numbers, decimal and common fractions.

THE EXPECTED SKILLS

(i) The four rules with natural numbers. (ii) The four rules with proper fractions. (iii) The four rules with decimals. (iv) The four rules with proper fractions.

CONTENT

Geometry

THE CONCEPTS ARE INVOLVED

(i) Vector. (ii) Displacement.

FACTS

(i) The point is displacemented to point. The line sector is displacemented to line sector. The triangle is displaced to triangle. (ii) No change on shape measure and attitude when displacement. (iii) For every displacement there is inversion

displacement to turned back in its place. (iv) The sum of two dispacement is one displacement. (vi) The displacement is a change of position only (not direction). (vii) Sum of angles of a triangle is 180 degree.

THE EXPECTED SKILLS

(i) Graphical representation of data. (ii) The displacement of point. (iii) The displacement of line sector. (iv) The displacement of triangle. (v) Finding result of two displacements. (vi) The realization of the type of triangle by its sides. (vii) The knowledge of types of triangle by their angles. (viii) Drawing angle with a given angle using a protractor. (ix) Drawing a triangle with given two sides and the angle between them.

A content analysis of the fifth primary school book (modern mathematics)

CONTENT

Numbers

THE CONCEPTS ARE INVOLVED

(i) Proportion. (ii) Mean. (iii) Associative property for addition and multiplication. (iv) Distributive property of multiplication over addition.

FACTS

(i) For any natural numbers A, B, and C:

(I) $A + (B + C) = (A + B) + C$.

(II) $A \times (B \times C) = (A \times B) \times C$.

(III) $A \times (B + C) = A \times B + A \times C$.

(ii) Mean = total of a set of quantities divided by number of quantities. Total of a set of quantities = mean x number of quantities.

THE EXPECTED SKILLS

(i) Approximation to one, two and three decimals. (ii) Calculating the mean of sets of numbers. (iii) Finding the total of a set of quantities if its mean is known.

CONTENT

Geometry. Enlargement.

THE CONCEPTS ARE INVOLVED

(i) Area. (ii) Rotation. (iii) Centre of rotation. (iv) Reflection. (v) Reflection line or line of symmetry. (vi) Combination of transformations. (vii) Symmetry. (viii) Axis of symmetry or symmetry line. (ix) Repeated reflections. (x) Vertical axis. (xi) Horizontal axis. (xii) Perpendicular lines.

FACTS

(i) Perimeter of a square = length of side x 4. (ii) Perimeter of a rectangle = (length + width) x 2. (iii) Area of a square = the side x itself. (iv) The area of rectangle = length x width. (v) The relation between square units. (vi) The relation between an Egyptian land measurements e.g Fidan, kirat sahem, etc... (vii) If B is an image of A, then the reflection line is perpendicular to the line AB. (viii) Many successive displacement can be replaced by one equivalent displacement.

THE EXPECTED SKILLS

(i) Finding perimeter and area of a square. (ii) Finding perimeter and area of a rectangle. (iii) Drawing squares and rectangles by measuring. (iv)

Drawing a right angled triangle by measuring. (v) Drawing angle equal to a known angle. (vi) Finding the image of a geometrical shape by repeated reflection in two perpendicular lines.

بسم الله الرحمن الرحيم

الاستاذ الفاضل / الاستاذه الفاضلة

انا بصدد عمل بحث فى التربية للحصول على الدكتوراه من كلية التربية بجامعة درهام فى انجلترا ·

امل فى تصميم اختبارات للمهارات الاساسية فى الرياضيات للمرحلة الابتدائية لكى تستخدم فى المدارس الابتدائية فى مصر ، وكجزء من رسالتى فاننى اقوم بعمل مسح لوجهات نظر المتخصصين فى مجال تدريس المهارات الاساسية للرياضيات فى المرحلة الابتدائية فى كل من مصر وانجلترا · ولذلك فاننى ارجو مساعدتكم ، وارشادكم الذى قد يثرى البحث ويغنيه ويجعل له اهمية ، وذلك من خلال الاجابة على الاستبيان الاتى :-

واننى اريد ان اوجه عناية سيادتكم باننى استخدمت بعض التعريفات الاجرائية فى هذا الاستبيان وسابدا بسردها :-

المهارة : ١- يقصد بها اى شئ يختص بالتعلم الفردى (الشخصى) والعمل بسهولة ودقة سواء اذا كان ذلك يتعلق بالعمل الجسمى (الجسدى) او العمل العقلى ·

٢- الكفاءه فى المعالجة اليدوية فى اليد ، الاصابع القدم ، العين ، والتنسيق والتازر بينهم ·

المهارة الرياضية (مهارة الرياضيات)

يقصد بها : القدرة على استخدام المهارة الفنية فى العمليات الحسابية مثل العد ، الاستنتاج ،

الطرح ، التجريد ·

المهارة الاساسية

ويقصد بها تلك المهارة الاساسية لاتقان الموضوعات المدرسية مثل الجمع او الطرح فى الحساب ·

المهارة التحويلية

ويقصد بها تحويل معلومة رياضية فى صورة الى اخرى ·

وتتمثل هذه المهارة فى الاتى :-

١- القيام بانشاءات فى الهندسة ، وتعنى التعامل مع الادوات الهندسية ، القياس بانواعه ، رسم بعض الاشكال بشروط معينه بما فى ذلك الانشاءات او العمليات الهندسية او ما يسمى بالهندسة العملية ·

٢- مهارة قراءة لغة الرياضيات ، وتعنى قراءة الرموز والمصطلحات الرياضية ومعرفة مدلولاتها وقراءة الجمل الرياضية (العبارات) وتعرف معناها والتعبير عنها بلغة التلميذ كما تشمل تحديد المصطلحات والمطلوب فى مسالة ما ·

٣- كما تتمثل فى القدرة على تحويل مسالة لفظية او تمرين هندسى الى شكل او مخطط والتعبير الفظى عن بعض القوانين والعلاقات وقراءة شكل هندسى والتعبير عن العلاقات الموجودة فيه لفظيا ، وتحويل جدول ما الى شكل بيانى ·

النمذجة الرياضية

ويقصد بها تحويل موقف فيزيائى ما الى مجموعة من العلاقات الرياضية ، كما

تعنى ايضا تحويل مسالة لفظية ما الى تعبيرات وعلاقات رمزية (مثل الوصول الى صيغة او صورة للمساحة ـ لمساحة المستطيل ـ بعد اخذ وحساب العديد من المربعات لعديد من المستطيلات) ٠

المهارات الاجرائية (اجراءات العمليات الاساسية)

وتتمثل هذه المهارة فى القدرة على اجراء عمليات حسابية ، مثل الجمع والطرح والقسمة والضرب فى الحالات الممكنة وعلى انواع الاعداد المختلفة ، وايجاد الجذور التربيعية والتكعيبية وتحليل الاعداد وايجاد العامل والمضاعف المشترك بين عددين او اكثر ٠

المهارات التطبيقية

ويقصد بها القدرة على تطبيق الصيغ البسيطة للقوانين والعلاقات ، مثل معرفة صيغة المساحة للمستطيل ، والقدرة على استخدام هذه الصيغة لحساب مساحة مستطيل معطى ٠

المهارات المنطقية

وتعنى القدرة على الوصول للنتائج من المعلومات المعطاه ٠

مثل ٢ +٣ = ٥ اذا ٥ ـ ٣ = ٢ او

فى المواقف عندما ا = ب ، ب = جـ اذا ا = جـ الخ ٠

مهارة حل المشكلات

وتعنى القدرة على رؤية العلاقات الرياضية فى اى موقف والوصول الى الحل ٠

ضع علامة (ـ) امام ماينا سبك فى الاسئلة من ١ : ٣ ٠

١ ـ السؤال الاول (ا)

مفتش فى المرحلة الابتدائية ناظر مدرسة ابتدائية

مدرس اول فى المدرسة الابتدائية وكيل مدرسة ابتدائية

مدرس رياضيات فى المرحلة الابتدائية

مدرس فى المرحلة الابتدائية

سيكولوجى فى قسم علم النفس فى الجامعة

مدرس طرق تدريس الرياضيات فى كلية التربية

مدرس فى قسم اصول التربية

مدرس مساعد فى كلية التربية

معيد فى كلية التربية

مفتش رياضيات

اى وظيفة اخرى ضع اسم وظيفتك

السؤال الاول (ب)

موهلاتك فى الرياضيات

١ ـ ثانويه عامة ٢ ـ دبلوم معلمين او معلمات نظام ٣ سنوات.

٣ ـ دبلوم معلمين او معلمات نظام خمس سنوات شعبة عامة

٤ ـ ثانوية عامة + ٢ دبلوم خاص فى تدريس الرياضيات

٥ ـ بكالوريوس رياضيات

٦ ـ بكالوريوس رياضيات وتربية

٧ ـ ماجستير فى الرياضيات او الرياضيات والتربية

٨ ـ دكتوراة فى التربيـــــــة

٩ ـ أبتدائيـــة قديمـــــــة

١٠ ـ اى موهـلات اخرى وضحـــهـا

السـوال الثانى

سـنوات العمـل فى المدرسـة الابتدائيـــــــة

١ الى ٥ ٦ الى ١٠ ١١ الى ١٥

١٦ الى ٢٠ ٢١ الى ٢٥ ٢٦ الى ٣٠

٣١ الى ٣٥ اكثر من ٣٥ ســـــــــنة

السـوال الثالث

الجنـس

ذكـر انثـى

ضع علامة (صح) امام اى عبارة من العبارات الاتيـــة مبينا اذا كنت موافق بشدة ، او موافق ، او غير متاكد او غير موافق ، او غير موافق بشـــــــــــــدة

مـــــوافـــق بشـــــدة

مـــــوافـــق

غـير متاكـــــد

غـــير مـــوافـــق

غـــير موافـــق بشـــدة

السـؤال الرابـع

اكتساب المهارات الأساسية للرياضيات من اهم الاهداف فى تدريس الرياضيات فى المرحلة الابتدائية ٠

موافق بشدة

موافق

غير متاكد

غير موافق

غير موافق بشدة

اذا كنت غير موافق بشدة من فضلك اذكر الاسباب

السؤال الخامس

مستوى مهارات الرياضيات المكتسبة بواسطة تلاميذ المرحلة الابتدائية العاديين مرضية ٠

موافق بشدة

موافق

غير متاكد

غير موافق

غير موافق بشدة

اذا كنت غير موافق بشدة من فضلك اذكر الاسباب٠

السؤال السادس

يجب على كل تلاميذ المرحلة الابتدائية فى مصر

تعلم المهارات الاساسية للرياضيات .

موافق بشدة

موافق

غير متاكد

غير موافق

غير موافق بشدة

اذا كنت موافق اعطى بعض الاسباب .

السوال السابع

يجب على كل تلاميذ المرحلة الابتدائية فى كل انحاء العالم تعلم المهارات الاساسية للرياضيات .

اذا كنت موافق اعطى بعض الاسباب

السوال الثامن

المهارات الاساسية للرياضيات لا تتغير فى اى مكان .

السوال التاسع

هناك اختلافات بين مهارات الرياضيات ، المهارات الاساسية للرياضيات .

اذا كنت موافق من فضلك اذكر هذه الاختلافات كما تراها انت

_____

_____

السوال العاشر

المهارات التحويلية من الاهداف المهمة فى تدريس الرياضيات فى المرحلة الابتدائية .

السوال الحادى عشر

المهارات الاتية تعتبر مهارات تحويلية .

(ا) القيام بانشاءات فى الهندسة مثل الهندسة العملية.

(ب) مهارات قراءة لغة الرياضيات ، وتعنى قراءة الرموز والمصطلحات الرياضية ومعرفة مدلولاتها وقراءة الجمل الرياضية .

(ج) تحويل البيانات الموجودة فى جدول ما الى رسم بيانى .

(د) التعبير عن العلاقات والقوانين الرياضية لفظيا .

(هـ) النمذجة الرياضية ، وتعنى تحويل موقف فيزيائى ما الى مجموعة من العلاقات الرياضية ، كما تعنى ايضا تحويل مسالة لفظية ما الى تعبيرات وعلاقات رمزية .

من فضلك اذكر اى مهارات اخرى يمكن ان تعتبر كمهارات تحويلية من وجهة نظرك.

السوال الثانى عشر

اكتاب المهارات الاجرائية من الاهداف المهمة فى تدريس الرياضيات فى المرحلة الابتدائية .

السـوال الثالث عشـر

المهـارات الاتيـة تعتبر مهارات اجرائيـة

(ا) القدرة على اجراء عمليات حسابية كالجمع والطرح والضرب.

(ب) القدرة على حساب مربع او مكعب اى عدد .

(ج) ايجاد العامل والمضعف المشترك بين عددين او اكثر .

(د) ايجاد الاتحاد والتقاطع للفئتين .

(هـ) القدرة على تحويل عدد من نظام لاخر (مثل القدرة على تحويل ١٢ للاساس ١٠ للنظام الثنائى) .

(و) القدرة على اجراء قواعد الحساب الاربعة فى الانظمة المختلفة .

اذكر اى مهارات اخرى التى تعتبرها مهارات اجرائية .

السـوال الرابع عشر

اكساب المهارات التطبيقية من الاهداف المهمة فى تدريس الرياضيات فى المرحلة الابتدائية .

موافق بشدة

موافق

غير متاكد

غير موافق

غير موفق بشدة

السـؤال الخـامس عـشـر

المهـارات الاتيـة تعـتبـر مـهـارات تـطـبـيـقـيـة :-

(ا) التـبـيـق المـبـاشـر لقـانـون او عـلاقـة " قـانون مساحة مثلا " .

(ب) التـعـبـيـر عـن مـتـغـيـر بدلالة مـتـغـيـرات اخـرى فـى علاقـة او قانون معـيـن .

مـن فـضـلك اذكر اى مـهـارات اخـرى يـمـكن ان تـعـتـبـر مـهـارات تـطـبـيـقـيـة فـى المـرحـلـة الابتدائيـة مـن وجـهـة نظـرك .

السـؤال السـادس عـشـر

اكـسـاب المـهـارات المنـطـقـيـة مـن الاهداف المـهـمـة فـى تدريـس الرياضيـات فـى المـرحـلـة الابتدائيـة .

مـوافـق بـشـدة

مـوافـق

غـيـر مـتـاكد

غـيـر مـوافـق

غـيـر مـوافـق بـشـدة

السـؤال السـابع عـشـر

المهـارات الاتيـة تعـتبـر مـهـارات مـنـطـقـيـة .

(ا) بـرهـان لبـعـض العلاقات الهـنـدسـيـة او الجـبـرية البـسـيـطـة .

مـثـل اذا كان ا=ب ، ب=ج اذا ا =ج .

(ب) التـعـلـيـل للـخـطـوات المـسـتـخـدمـة لحـل مـسـالة رياضيـة .

(ج) القدرة على حل المسالة الرياضية بطرق متعددة مثل القدرة على تقرير اكبر ضلع فى مثلث بالقياس ، ومعرفة انه مقابل اكبر زاوية فى مثلث .

(د) القدرة على استخدام العمليات العكسية

مثل ٥ ـ ؟ = ٣ ، ٥ ـ ٣ =

من فضلك اذكر اى مهارات اخرى التى تعتبرها مهارات منطقية .

السوال الثامن عشر

اكساب مهارة حل المشكلات من الاهداف المهمة فى تدريس الرياضيات فى المرحلة الابتدائية .

اذا كنت موافق من فضلك اذكر بعض الاسباب .

السوال التاسع عشر

المهارات الاتية تعتبر مهارات حل المشكلات :ـ

(ا) استخدام اساليب رياضية عامة وتعنى اعطاء امثلة تحقق خاصة معينة او نظرية ، وتعرف ظاهرة عامة من امثلة خاصة ، واستدعاء بعض الخواص المناسبة لموقف رياضى والتمييز بين المعطيات والنتائج فى مسالة او مشكلة .

(ب) القدرة على الوصول لنتائج عامة من امثلة خاصة معينة .

(ج) حل تمارين تتضمن مهارات متعددة .

(د) حل اسئلة غير نمطية .

(هـ) صياغة مشكلة علمية فى اسلوب رياضى ، واستخدام اساليب رياضية فى حل مشكلات أو مسائل غير رياضية .

(ع) القدرة على استخدام طرق رياضية فى حل مشكلات رياضية او غير رياضية .

من فضلك اذكر اى مهارات اخرى التى تعتبرها من مهارات حل المشكلات .

السوال العشرون

(ا) المهارات الاساسية للرياضيات تحقق من خلال محتوى الرياضيات الذى يستخدم فى المدرسة الابتدائية الان .

(ب) هذه المهارات تحقق باستخدام .

(١) التعلم بالاكتشاف .

(٢) طريقة حل المشكلات .

(٣) الطرق العملية .

(٤) التعليم البرنامجى .

(٥) طرق اخرى من فضلك اذكرها .

السوال الحادى والعشرين

المهارات الاساسية للرياضيات تحقق افضل من خلال :-

(ا) الرياضيات الحديثة .

(ب) الرياضيات التقليدية .

(ج) المزج بين الرياضيات الحديثة والتقليدية .

السوال الثانى والعشرين

لتحقيق المهارات الاساسية للرياضيات من الافضل استخدام:

(ا) السبورة ، الطباشير ، الحديث .

(ب) الاجهزة والنماذج التعليمية .

(ج) استخدام البيئة .

(د) اشياء اخرى من فضلك وضحها .

السوال الثالث والعشرين

المهارات الاساسية للرياضيات تحقق من خلال طرق التدريس الحالية فى المرحلة الابتدائية .

اذا كنت موافق من فضلك اذكر الطرق المستخدمة .

اذا كنت غير موافق من فضلك وضح الاسباب .

السوال الرابع والعشرين

المهارات الاساسية للرياضيات توخذ فى الاعتبار عند وضع مناهج اعداد معلمى المرحلة الابتدائية .

APPENDIX (XV)

FORM OF THE ENGLISH QUESTIONNAIRE

Dear Sir/Madam,

I am a Ph.D student in the school of Education at the university of Durham. I hope to design tests of fundamental (Basic) mathematical skills for use in Egyptian schools, and as part of my research I am making a survey of experts' views on these skills both in Egypt and England.

I would be most grateful for your help by completion of the following questionnaire. For the purposes of this questionnaire I have used the following definitions of skills:-

(1) SKILL:

1- Anything that the individual has learned to do with ease and precision; may be either a physical or a mental performance.

2-(Orthopaedic) manipulative proficiency in hand, finger, foot, and eye coordination. (A dictionary definition).

(2) MATHEMATICAL SKILL:

Is the ability to use the operational

techniques of mathematics for example, computation, induction, deduction, and abstraction.

(3) FUNDAMENTAL SKILL:

Is that which is basic to the mastery of a school subject, such as addition or subtraction in arithmetic.

(4) TRANSFERABLE SKILL:

Is the ability to transfer a single piece of mathematical information from one form into another form. (For example, the ability in geometry to read measurements of a triangle and to draw that triangle, or being able to read a mathematical sentence and being able to express its meaning in children's language, or reading a table of data and being able to draw a graph of that data etc....).

(5) MATHEMATICAL MODELISM:

Is the ability to create a mathematical model of a physical situation in terms of symbols or equations. (e.g being able to arrive at the formula for area of a rectangle after having "counted squares" in many rectangles)

(6) PROCEDURAL SKILL:

Is the ability to do a fundamental

mathematical process (e.g the ability to do addition, subtraction, division, multiplication etc....).

(7) APPLIED SKILL:

Is the ability to apply simple formulae, laws or relations. (e.g knowing the formula for area of a rectangle, being able to use the formula to calculate the area of a given rectangle).

(8) LOGICAL SKILL:

Is the ability to draw a conclusion from given data (e.g being able to reason that since 2 + 3 = 5 then 3 = 5 - 2, or in situations where A = B and B = C to conclude that A = C etc.....).

(9) PROBLEM SOLVING SKILL:

Is the ability to see the mathematical relationships in a situation and to compute a solution.

Please tick a box or boxes in questions 1 to 3.

(1) (a)

Inspector or advisor in primary school	Head teachers in primary school	Primary teacher with responsibility for mathematics	Primary teacher

Psychologist in University Department of Education	Maths. Method lecturer in Univ. Dept. of Education	Primary school Methods lecturer in Univ. Dept. of Education	Other, please state

(b) Qualification in Mathematics

(1) O level	
(2) A level	
(3) Teaching Certificate	
(4) Degree	
(5) P.G.C.E	

(2) Years of work in primary school

1-5	6-10	11-15	16-20	21-25	26-30	31-35	Over 35

(3) Sex

Male	Female

For each statement below, please indicate with a tick (/) whether you strongly agree (SA) agree (A), are undecided (U), disagree (D), or strongly disagree (SD).

(4) Acquiring fundamental mathematical skills is an important aim in teaching mathematics in primary school.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you strongly disagree please give the reasons.

---

(5) The level of mathematical skills reached by the normal primary school child is satisfactory.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you disagree please give the reasons.

---

(6) All British primary school pupils should be taught Fundamental mathematical skills.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you agree please give some reasons.

---

(7) Fundamental mathematical skills should be taught to primary school pupils throughout the world.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you agree please give some reasons.

---

(8) Fundamental mathematical skills are the same everywhere.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(9) There are differences between mathematical skills and Fundamental mathematical skills.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you agree please give the differences as you see them.

---

(10) Transferable skills are an important aim in primary mathematics teaching.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(11) The following skills are transferable skills:-

(a) Practical skills, as in practical geometry.

(b) Reading skills of mathematical language as in reading mathematical symbols and terms and being aware of their meaning.

(c) Transferring a table of data to a graph.

(d) Expressing a mathematical law, equation or relation in words.

(e) Creating a mathematical model of a physical situation in terms of symbols, equations or formulae.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please list any other skills that you consider transferable skills.

---

(12) Acquiring procedural skills are an important aim in primary mathematics teaching.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(13) The following are procedural skills:-

(a) Being able to do mechanical addition, subtraction, multiplication.

(b) Being able to calculate the square or cube of a number.

(c) Finding a common divisor denominator or common multiple of two numbers.

(d) Finding the union or intersection of two sets.

(e) Being able to change a number from one base to another. (e.g being able to change 12 base ten to a binary number).

(f) Being able to do simple four rule examples in multibase arithmetic.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please list any other skills that you consider as procedural skills.

---

(14) Acquiring applied skills is an important aim in primary mathematics teaching.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(15) The following are applied skills:-

(a) Direct application of mathematical laws or relations (e.g using the formula for area of a rectangle).

(b) Expressing a variable as a combination of other variables (e.g the perimeter of a rectangle is the sum of the lengths of the four sides).

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please list any other skills that you consider as applied skills.

---

(16) Acquiring logical skills is an important aim in primary mathematics teaching.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(17) The following skills are logical skills:-

(a) Proof of simple geometrical or algebraic

relation

(e.g if a = b and b = c then a = c).

(b) Being able to solve a problem by various methods

(e.g being able to decide the longest side of a triangle by measurement of length or realizing it is opposite the largest angle).

(c) Being able to use an inversion process (e.g solving 5 - ? = 3 by calculating 5 - 3).

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please list any other skills which you consider as logical skills.

---

(18) Acquiring problem solving skills is an important aim in primary mathematics teaching.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you agree please list some reasons.

---

(19) The following skills are problem solving skills:-

(a) Being able to establish the relationship between given data and the required result.

(b) Being able to arrive at a general result from particular examples.

(c) Solving a problem which requires several skills.

(d) Solving non-standard problem.

(e) Being able to formulate a simple scientific problem in terms of mathematics (e.g establishing the relation between the height a ball is dropped from and the rebound height).

(f) Being able to use mathematical methods in solving mathematical or non-mathematical issues.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please give any other skills which you consider problem solving skills.

---

(20) (A) The Fundamental mathematical skills are well covered in the scheme of mathematics used in your school.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(B) These skills are covered by:-

(i) Discovery learning.

(ii) Problem solving.

(iii) Practical approaches.

(iv) Programmed learning approaches.

(v) Other learning methods:- (Please state).

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(21) The Fundamental mathematical skills are best covered in:-

(a) Modern syllabus.

(b) Traditional syllabus.

(c) Mixed syllabus.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(22) To cover the Fundamental Mathematical skills it is best to use:

(a) Blackboard, chalk, talk.

(b) Structural apparatus.

(c) The environment.

(d) Other equipment (Please list)

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

(23) The Fundamental mathematical skills are well learnt and understood by primary children using current teaching methods.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

If you agree please state method used:

If you disagree please explain why:

---

(24) Fundamental mathematical skills are well covered in initial teacher training courses.

Strongly agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly disagree (SD)

Please give comments on your views for this question.

APPENDIX XV

The results of the Egyptian questionnaire (jobs)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	12	9.9	10.3	10.3
2	13	10.7	11.1	21.4
3	13	10.7	11.1	32.5
4	25	20.7	21.4	53.8
5	21	17.4	17.9	71.8
6	12	9.9	10.3	82.1
7	1	0.8	0.9	82.9
8	1	0.8	0.9	83.8
9	1	0.8	0.9	84.6
10	2	1.7	1.7	86.3
11	6	5.0	5.1	91.5
12	10	8.3	8.5	100.0
13	4	3.3	Missing	100.0
total	121	100.0	100.0	

APPENDIX (XVI)

The results of the Egyptian questionnaire (qualifications)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	1	0.8	0.9	0.9
2	13	10.7	11.3	12.2
3	45	37.2	39.1	51.3
4	26	21.5	22.6	73.9
5	3	2.5	2.6	76.5
6	7	5.8	6.1	82.6
7	1	0.8	0.9	83.5
8	1	0.8	0.9	84.3
9	2	1.7	1.7	86.1
10	3	2.5	2.6	88.7
11	7	5.8	6.1	94.8
12	2	1.7	1.7	96.5
13	4	3.3	3.5	100.0
99	6	5.0	Missing	100.0
total	121	100.0	100.0	

APPENDIX (XVII)

The results of the Egyptian questionnaire (years of work)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	10	8.3	9.5	9.5
2	12	9.9	11.4	21.0
3	24	19.8	22.9	43.8
4	23	19.0	21.9	65.7
5	15	12.4	14.3	80.0
6	10	8.3	9.5	89.5
7	8	6.6	7.6	97.1
8	3	2.5	2.9	100.0
9	16	13.2	Missing	100.0
total	121	100.0	100.0	

APPENDIX (XVIII)

The results of the Egyptian questionnaire (Sex)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	83	68.6	69.7	69.7
2	36	29.8	30.3	100.0
9	2	1.7	Missing	100.0

APPENDIX (XIX)

The results of the Egyptian questionnaire (question 4)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	82	67.8	68.3	68.3
2	38	31.4	31.7	100.0
9	1	0.8	Missing	100.0
total	121	100.0	100.0	

APPENDIX (XX)

The results of the Egyptian questionnaire (question 5)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	21	17.4	17.9	17.9
2	12	9.9	10.3	28.2
3	4	3.3	3.4	31.6
4	34	28.1	29.1	60.7
5	46	38.0	39.3	100.0
9	4	3.3	Missing	100.0
total	121	100.0	100.0	

APPENDIX (XXI)

The results of the Egyptian questionnaire (question 6)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	69	57.0	60.0	60.0
2	41	33.9	35.7	95.7
3	4	3.3	3.5	99.1
4	1	0.8	0.9	100.0
9	6	5.0	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXII)

The results of the Egyptian questionnaire (question 7)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	62	51.2	53.0	53.0
2	36	29.8	30.8	83.8
3	14	11.6	12.0	95.7
4	5	4.1	4.3	100.0
9	4	3.3	Missing	100.0
Total	121	100.0		

APPENDIX (XXIII)

The results of the Egyptian questionnaire (question 8)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	50	41.3	44.2	44.2
2	43	35.5	38.1	82.3
3	14	11.6	12.4	94.7
4	5	4.1	4.4	99.1
5	1	0.8	0.9	100.0
9	8	6.6	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXIV)

The results of the Egyptian questionnaire (question 9)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	19	15.7	17.3	17.3
2	51	42.1	46.4	63.6
3	18	14.9	16.4	80.0
4	22	18.2	20.0	100.0
9	11	9.1	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXV)

The results of the Egyptian questionnaire (question 10)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	56	46.3	54.9	54.9
2	35	28.9	34.3	89.2
3	8	6.6	7.8	97.1
4	3	2.5	2.9	100.0
9	19	15.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXVI)

The results of the Egyptian questionnaire (question 11 a)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	46	38.0	59.0	59.0
2	28	23.1	35.9	94.9
3	2	1.7	2.6	97.4
4	2	1.7	2.6	100.0
9	43	35.5	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXVII)

The results of the Egyptian questionnaire (question 11 b)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	36	29.8	52.2	52.2
2	31	25.6	44.9	97.1
3	2	1.7	2.9	100.0
9	52	43.0	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXVIII)

The results of the Egyptian questionnaire (question 11 c)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	31	25.6	44.2	44.2
2	37	30.6	52.9	97.1
3	2	1.7	2.9	100.0
9	51	42.1	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXIX)

The results of the Egyptian questionnaire (question 11 d)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	31	25.6	47.0	47.0
2	31	25.6	47.0	93.9
3	4	3.3	6.1	100.0
9	55	45.5	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXX)

The results of the Egyptian questionnaire (question 11 e)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	30	24.8	41.7	41.7
2	35	28.9	48.6	90.3
3	7	5.8	9.7	100.0
9	49	40.5	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXI)

The results of the Egyptian questionnaire (question 12)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	64	52.9	62.1	62.1
2	34	28.1	33.0	95.1
3	5	4.1	4.9	100.0
9	18	14.9	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXII)

The results of the Egyptian questionnaire (question 13 a)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	58	47.9	61.7	61.7
2	35	28.9	37.2	98.9
3	1	0.8	1.1	100.0
9	27	22.3	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXIII)

The results of the Egyptian questionnaire (question 13 b)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	45	37.2	57.0	57.0
2	31	25.6	39.2	96.2
3	2	1.7	2.5	98.7
4	1	0.8	1.3	100.0
9	42	34.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXIV)

The results of the Egyptian questionnaire (question 13 c)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	43	35.5	54.4	54.4
2	34	28.1	43.0	97.5
3	2	1.7	2.5	100.0
9	42	34.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXV)

The results of the Egyptian questionnaire (question 13 d)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	45	37.2	57.0	57.0
2	30	24.8	38.0	94.9
3	3	2.5	3.8	98.7
4	1	0.8	1.3	100.0
9	42	34.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXVI)

The results of the Egyptian questionnaire (question 13 e)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	42	34.7	56.0	56.0
2	22	18.2	29.3	85.3
3	10	8.3	13.3	98.7
4	1	0.8	1.3	100.0
9	46	38.0	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXVII)

The results of the Egyptian questionnaire (question 13 f)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	50	41.3	63.3	63.3
2	26	21.5	32.9	96.2
3	1	0.8	1.3	97.5
4	2	1.7	2.5	100.0
9	42	34.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXVIII)

The results of the Egyptian questionnaire (question 14)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	57	47.1	57.0	57.0
2	35	28.9	35.0	92.0
3	2	1.7	2.0	94.0
4	5	4.1	5.0	99.0
5	1	0.8	1.0	100.0
9	21	17.4	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXIX)

The results of the Egyptian questionnaire (question 15 a)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	42	34.7	54.5	54.5
2	33	27.3	42.9	97.4
3	1	0.8	1.3	98.7
4	1	0.8	1.3	100.0
9	44	36.4	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXX)

The results of the Egyptian questionnaire (question 15 b)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	29	24.0	40.8	40.8
2	33	27.3	46.5	87.3
3	6	5.0	8.5	95.8
4	3	2.5	4.2	100.0
9	50	41.3	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXI)

The results of the Egyptian questionnaire (question 16)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	51	42.1	54.3	54.3
2	36	29.8	38.3	92.6
4	6	5.0	6.4	98.9
5	1	0.8	1.1	100.0
9	27	22.3	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXII)

The results of the Egyptian questionnaire (question 17 a)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	45	37.2	57.7	57.7
2	28	23.1	35.9	93.6
4	4	3.3	5.1	98.7
5	1	0.8	1.3	100.0
9	43	35.5	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXIII)

The results of the Egyptian questionnaire (question 17 b)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	34	28.1	54.0	54.0
2	28	23.1	44.4	98.4
3	1	0.8	1.6	100.0
9	58	47.9	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXIV)

The results of the Egyptian questionnaire (question 17 c)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	37	30.6	56.9	56.9
2	28	23.1	43.1	100.0
9	56	46.3	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXV)

The results of the Egyptian questionnaire (question 18)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	54	44.6	50.5	50.5
2	38	31.4	35.5	86.0
3	10	8.3	9.3	95.3
4	5	4.1	4.7	100.0
9	14	11.6	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXVI)

The results of the Egyptian questionnaire (question 19 a)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	38	31.4	49.4	49.4
2	37	30.6	48.1	97.4
3	2	1.7	2.6	100.0
9	94	36.4	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXVII)

The results of the Egyptian questionnaire (question 19 b)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	32	26.4	51.6	51.6
2	27	27.3	43.5	95.2
3	2	1.7	3.2	98.4
4	1	0.8	1.6	100.0
9	59	48.8	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXVIII)

The results of the Egyptian questionnaire (question 19 c)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	28	23.1	46.7	46.7
2	26	21.5	43.3	90.0
3	1	0.8	1.7	91.7
4	5	4.1	8.3	100.0
9	61	50.4	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (XXXXIX)

The results of the Egyptian questionnaire (question 19 d)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	25	20.7	40.3	40.3
2	32	26.4	51.6	91.9
3	2	1.7	3.2	95.2
4	3	2.5	4.8	100.0
9	59	48.8	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (L)

The results of the Egyptian questionnaire (question 19 e)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	34	28.1	54.0	54.0
2	22	18.2	34.9	88.9
3	7	5.8	11.1	100.0
9	58	47.9	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LI)

The results of the Egyptian questionnaire (question 19 f)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	40	33.1	51.3	51.3
2	34	28.1	43.6	94.9
3	3	2.5	3.8	98.7
4	1	0.8	1.3	100.0
9	43	35.5	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LII)

The results of the Egyptian questionnaire (question 20 A)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	7	5.8	8.3	8.3
2	11	9.1	13.1	21.4
3	27	22.3	32.1	53.5
4	39	32.2	46.4	99.9
9	37	30.6	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LIII)
The results of the Egyptian questionnaire (question 20 B)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	15	12.4	16.3	16.3
2	8	6.6	8.7	25.0
3	10	8.3	10.9	35.9
4	2	1.7	2.2	38.0
5	4	3.3	4.3	42.4
6	7	5.8	7.6	50.0
7	14	11.6	15.2	65.2
8	4	3.3	4.3	69.6
9	2	1.7	2.2	71.7
10	5	4.1	5.4	77.2
11	1	0.8	1.1	78.3
12	3	2.5	3.3	81.5
13	2	1.7	2.2	83.7
14	8	6.6	8.7	92.4
15	7	5.8	7.6	100.0
99	29	24.0	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LIV)

The results of the Egyptian questionnaire (question 21)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	23	19.0	21.3	21.3
2	7	5.8	6.5	27.8
3	78	64.5	72.2	100.0
9	13	10.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LV)

The results of the Egyptian questionnaire (question 22)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	16	13.2	15.7	15.7
2	8	6.6	7.8	23.5
3	6	5.0	5.9	29.4
4	13	10.7	12.7	42.2
5	2	1.7	2.0	44.1
6	7	5.8	6.9	51.0
7	42	34.7	41.2	92.2
8	8	6.6	7.8	100.0
9	19	15.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LVI)

The results of the Egyptian questionnaire (question 23)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	7	5.8	6.9	6.9
2	3	2.5	2.9	9.8
3	26	21.5	25.5	35.3
4	35	28.9	34.3	69.6
5	31	25.6	30.4	100.0
9	19	15.7	Missing	100.0
Total	121	100.0	100.0	

APPENDIX (LVII)

The results of the Egyptian questionnaire (question 24)

Code	Absolute Freq.	Relative Freq.	Adjusted Freq.	CUM Freq.
1	75	62.0	74.3	74.3
2	21	17.4	20.8	95.0
3	2	1.7	2.0	97.0
4	2	1.7	2.0	99.0
5	1	0.8	1.0	100.0
9	20	16.5	Missing	100.0
Total	121	100.0	100.0	

اختبار مهارات الرياضيات عمر ٧ - ٩ سنوات

زينب احمد عبد الغنى خالد

اسم المدرسة :-

اسم التلميذ :-

تاريخ الاختبار :-

تاريخ ميلاد التلميذ :-

العمر :-

الجنس :-

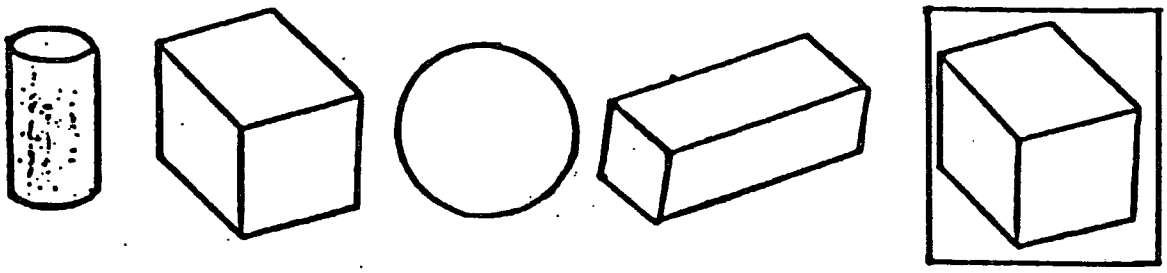
درجة التلميذ فى مادة الحساب

لنصف السنة الدراسية :-

(١)

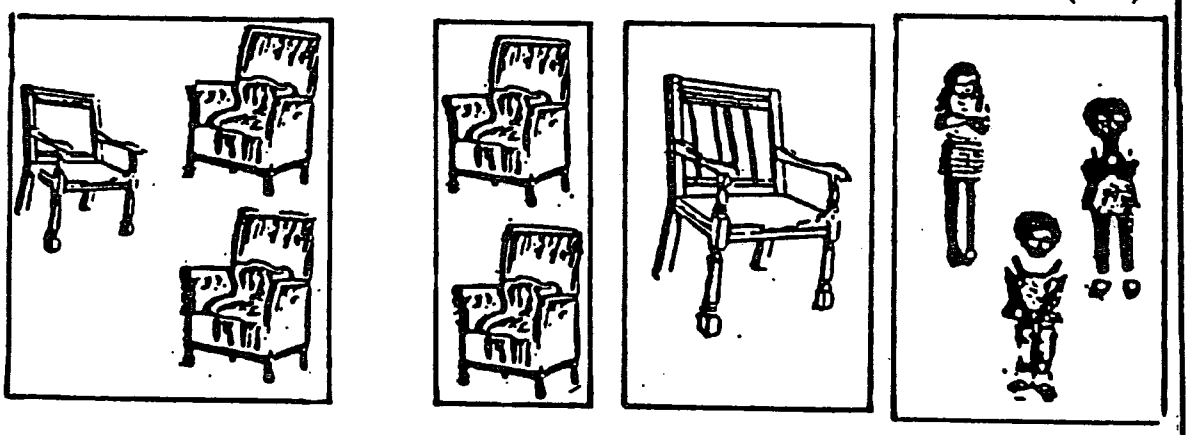
١ـ

(٢)



٢ـ

(٣)



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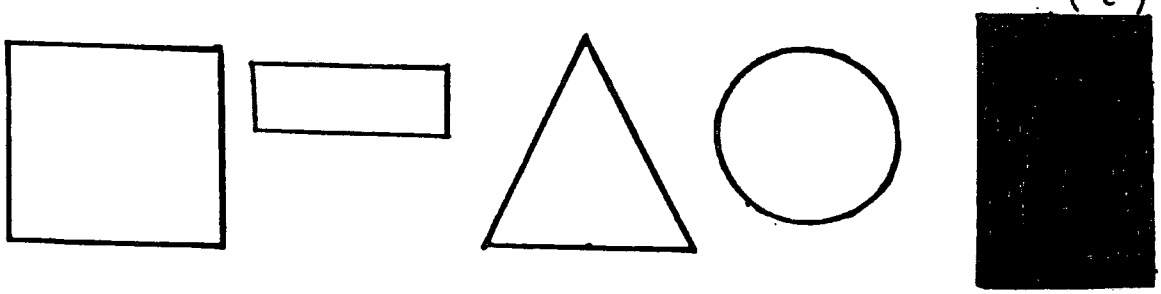

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(٥)

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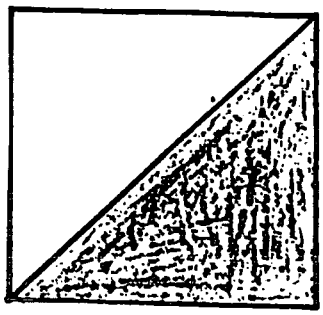
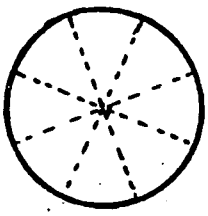
641

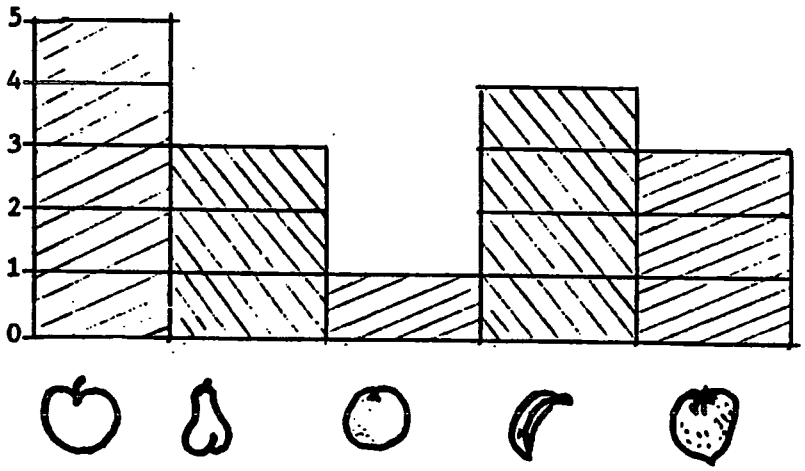
٦ـ (٦)



٧ـ (٧)



٨ـ (٨)



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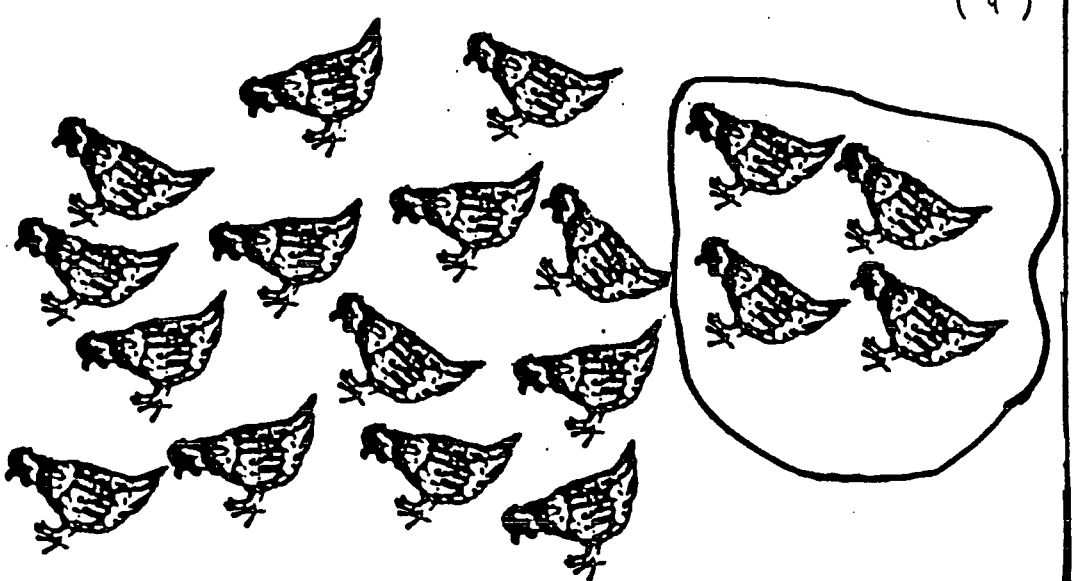
٩ـ (٩)



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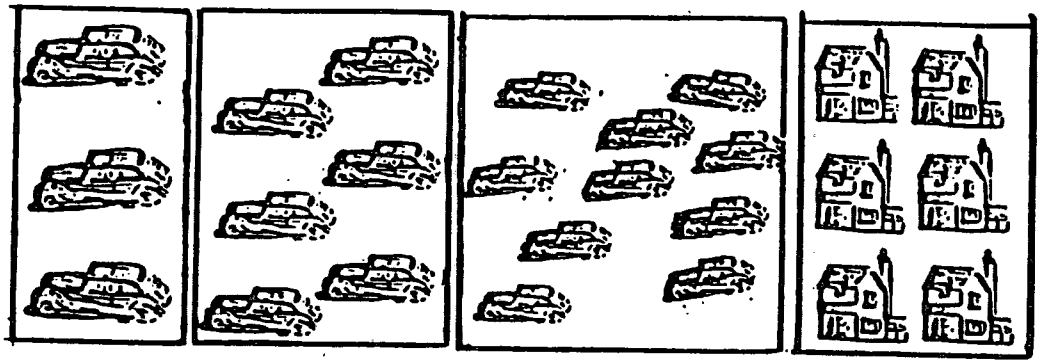

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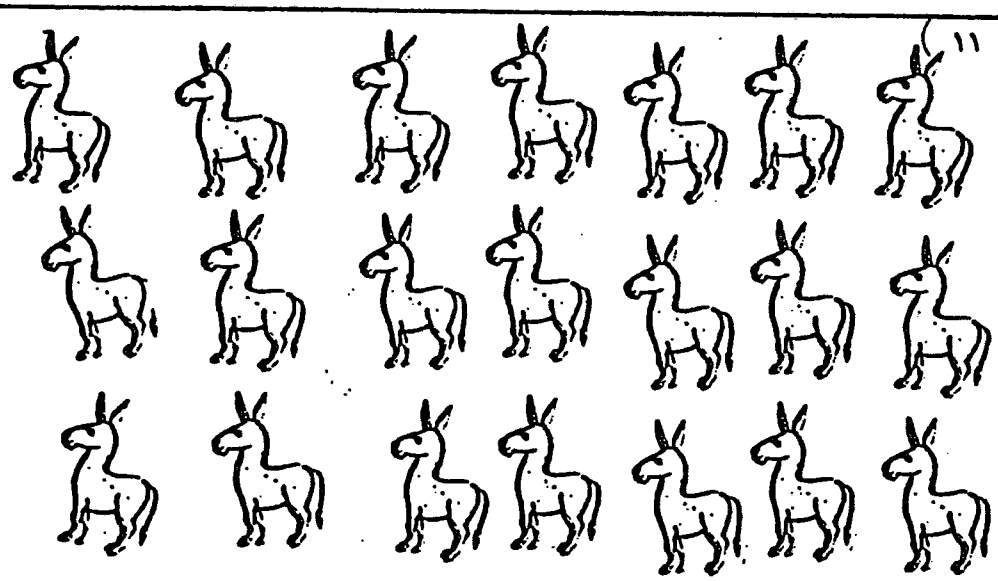
(١١)



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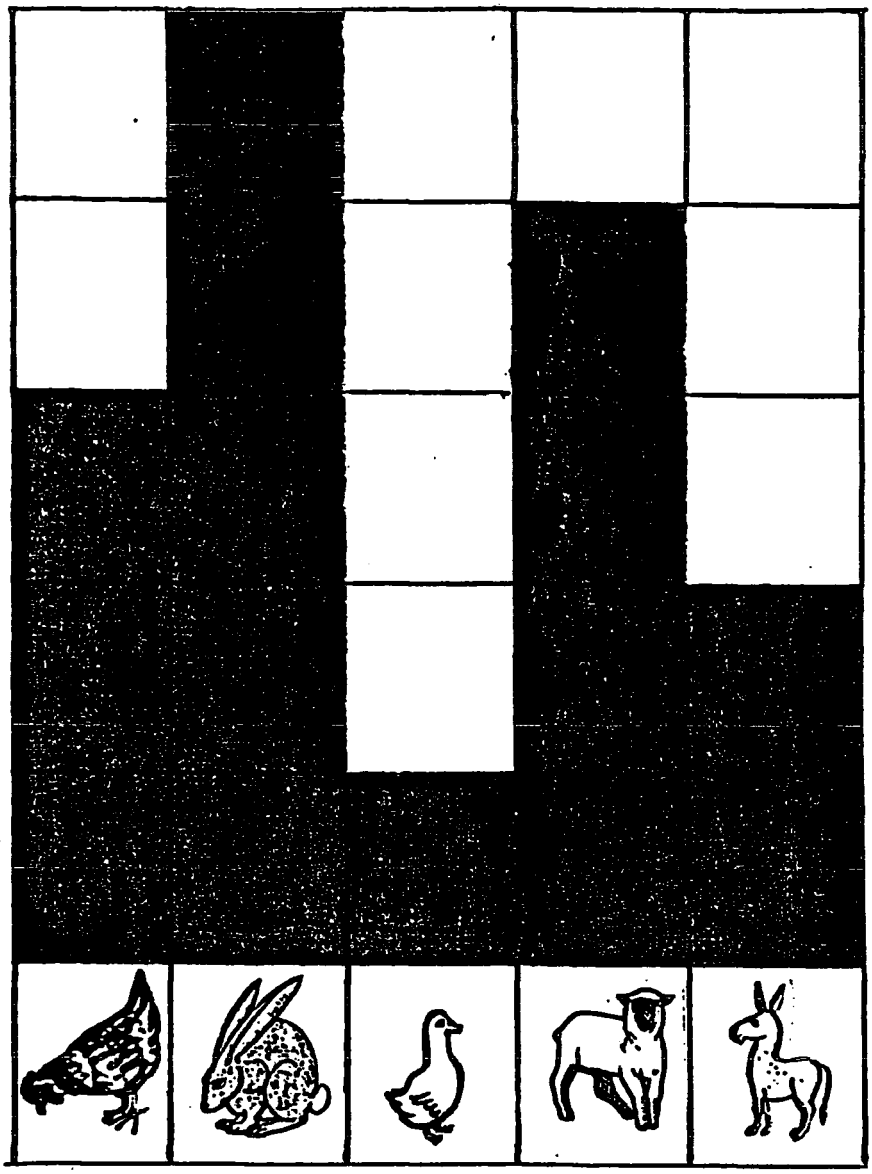
(١٢)

١٢ـ

642

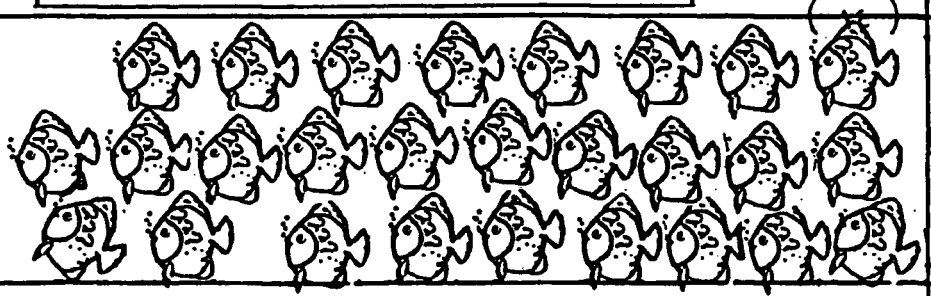
(١٣)

عائلات
الفلاحين



عائلـــــة

١٣-



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٠٥٦٥ ٠٠٥٦ ٦٠٠٠ ٥٦٠٠ ٠٠٠٠

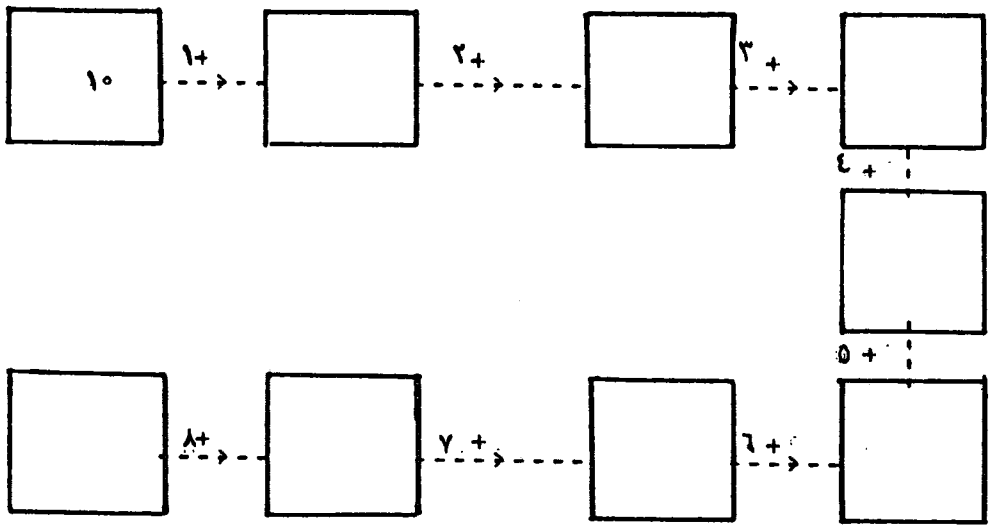
١٥-

٤٣٥٢ ٣٥٤٢ ٢٤٣٥ ٢٣٤٥ ٥٤٣٢

١٦-

(١٧)

17)



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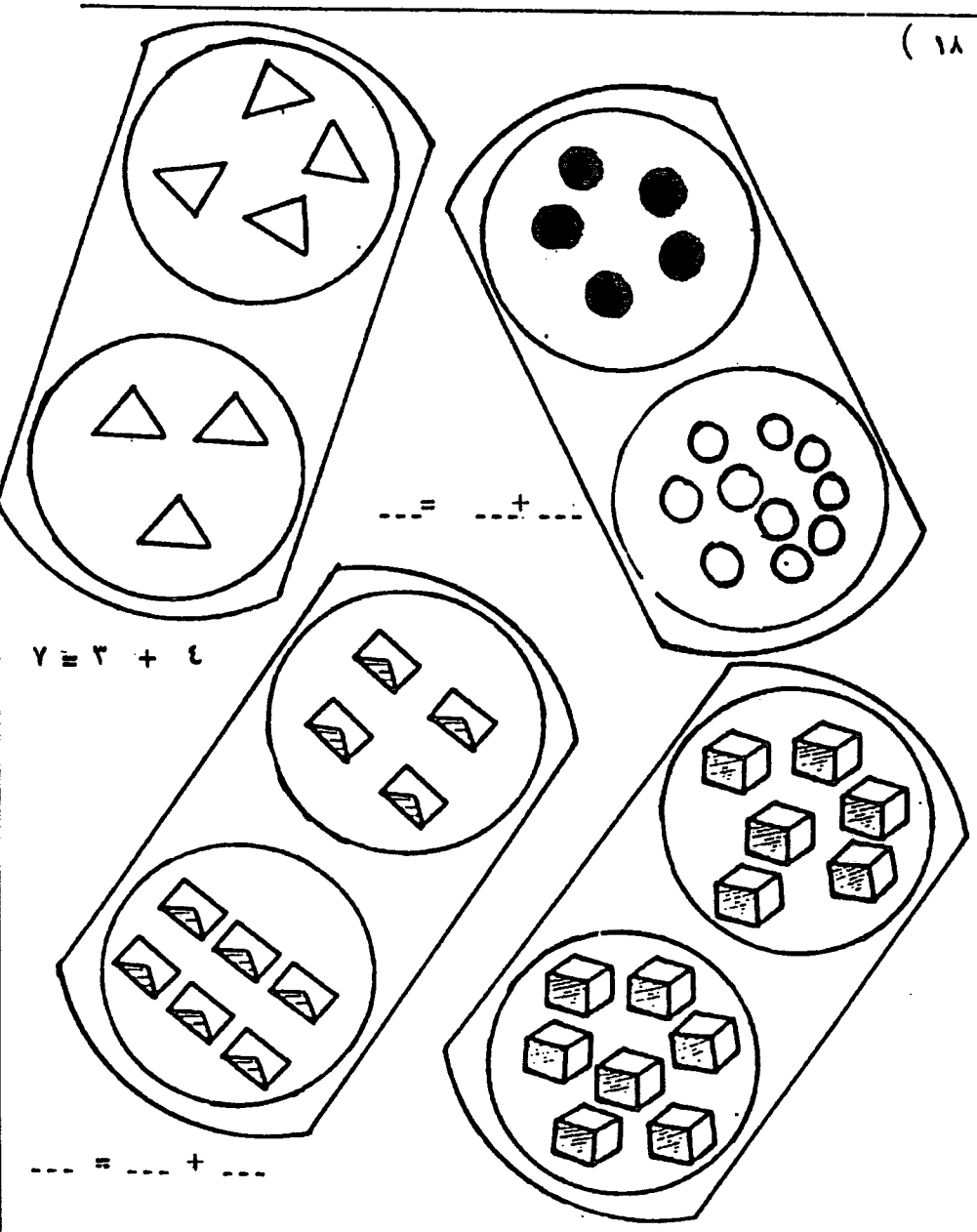
(١٨)



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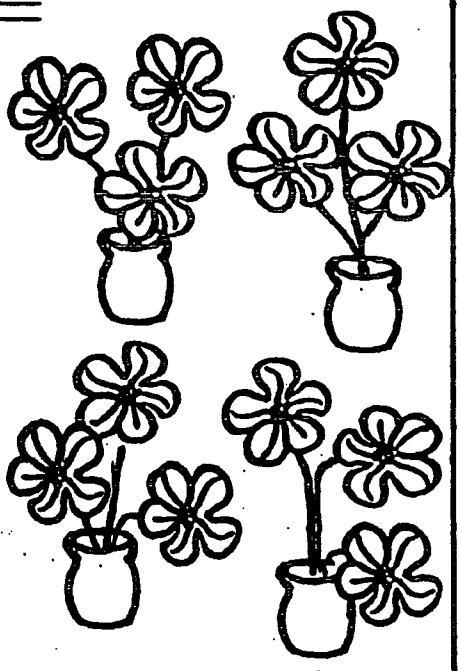
الصفحة ٦

٣ × ٢ = ٦



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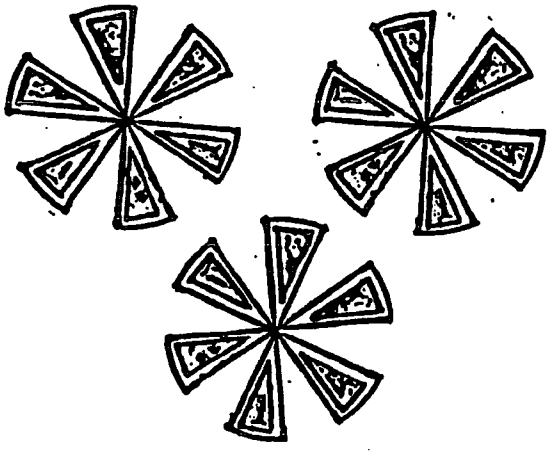

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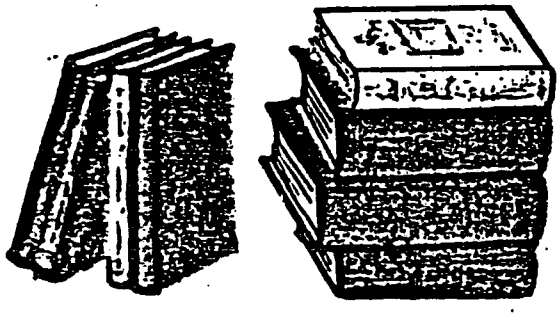

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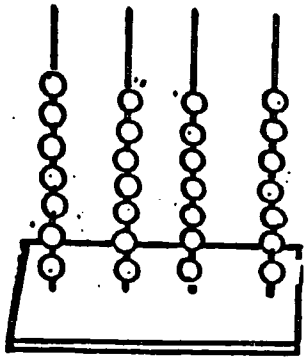

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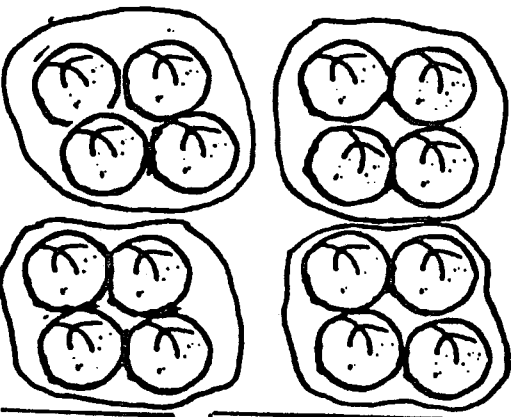
(٢٠)



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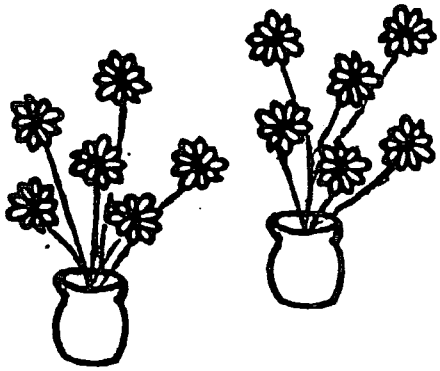
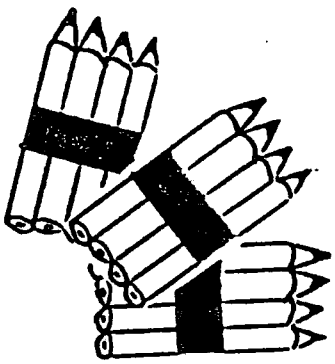
---+---+---+--- = --- x ---

٦ + ٦ = ٦ x ٢



٦ + ٦ = ٦ x ٢



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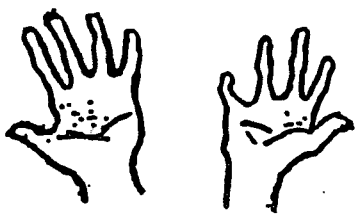

--- + --- = --- x ---

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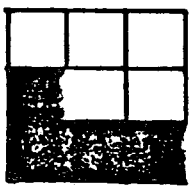

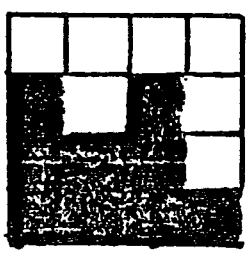

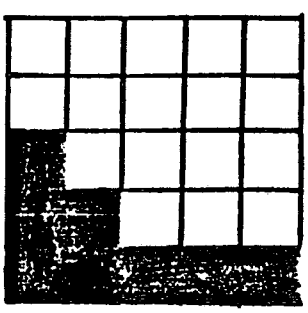

٩ ـ ٤ = ٥

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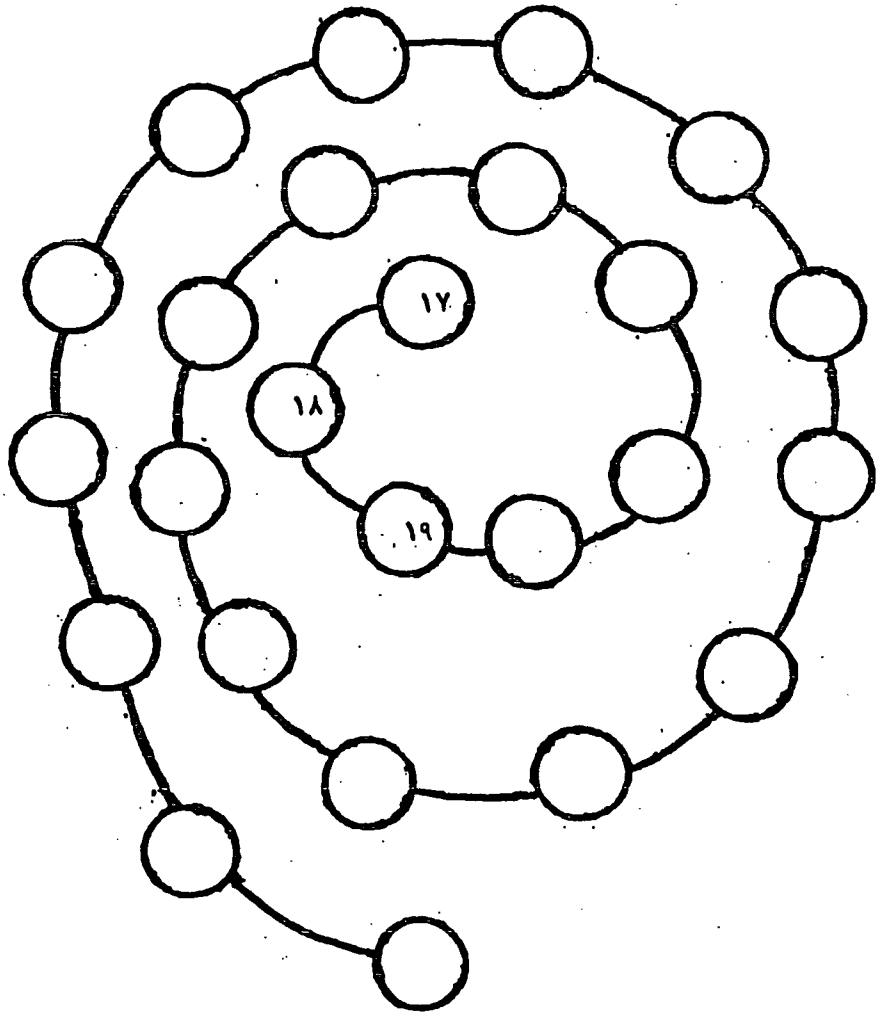
644

(٢٢)



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(٢٣)

١٠ + ١٥ = ٢٥

--- + --- = ٢٥

--- + --- = ٢٥

_٢٣

(٢٤)

١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ١٠ ١١ ١٢ ١٣

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(٢٥)

٣٠ = ٣ + [ ] + ٧

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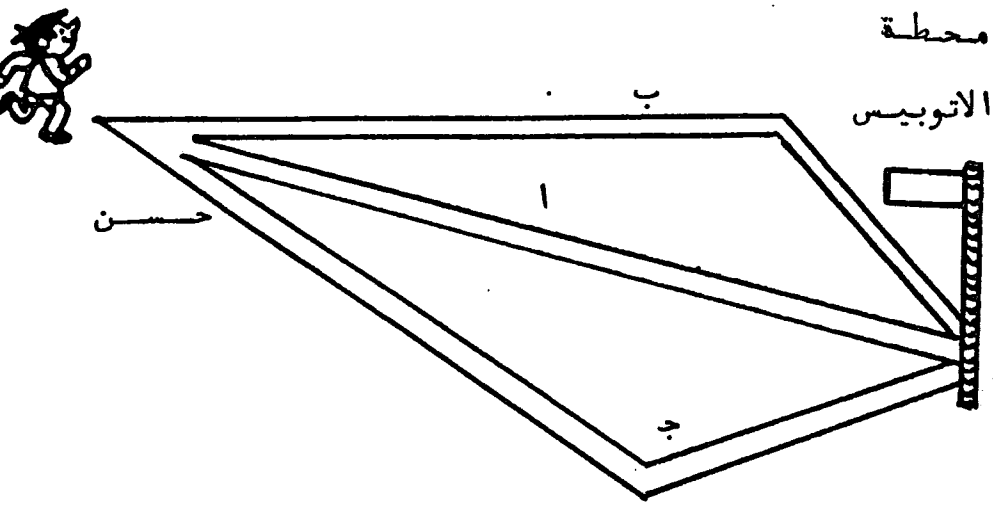
(٢٦)



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(٢٧)

٧ × ☐ = ٦٣

٢٧ـ

(٢٨)

١ ، ٦ ، ١١ ، ١٦ ، ☐

٢٨ـ

(٢٩)

٢٠ ☐ ٤ = ٥

٩ ☐ ١ = ٩

١١ ☐ ٤ = ١٩ ☐ ٤

٢٩ـ

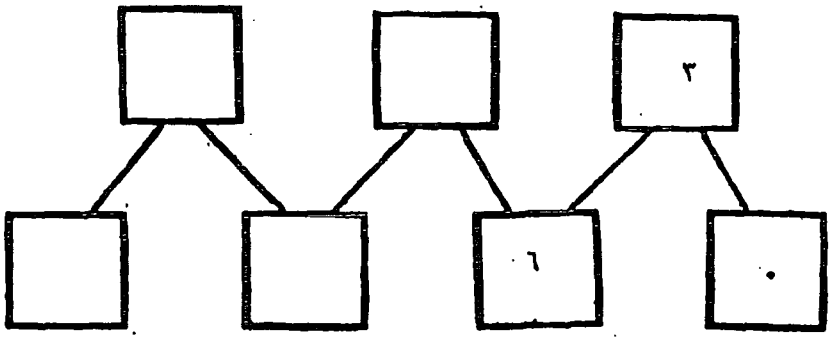
(٣٠)

٤ ١٤ ١٥ ١٢ ١٦ ١٩ ٢٠

٣٠ـ

(٣١)

645



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(٣٢)

١٣ ٢٠ ٢٧ ٣٤ ٤١ ١٢ ١٣

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(٣٣)

٣١٢ ___ ١١٥ ___

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(٣٤)

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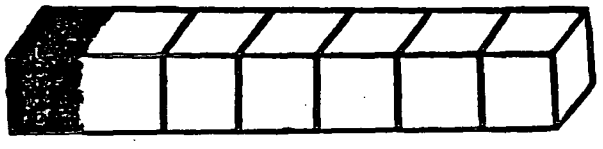
(٣٥)



---- جـرام

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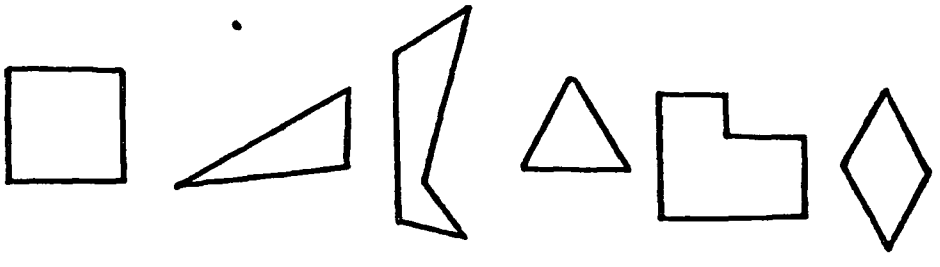
(٣٦)



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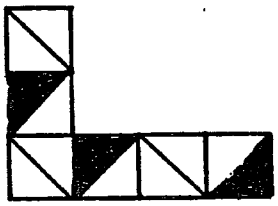
(٣٧)



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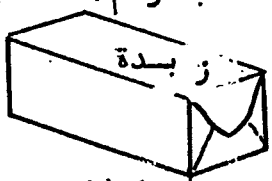
(٣٨)

١٠٠٠ جرام = واحد كيلو جرام



٤/١ كيلو جرام زبده

٢/١ كيلو جرام سكر

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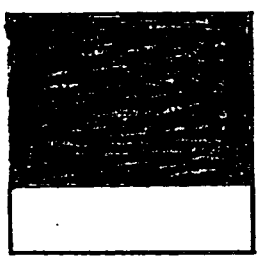
٣٨ـ

(٣٩)



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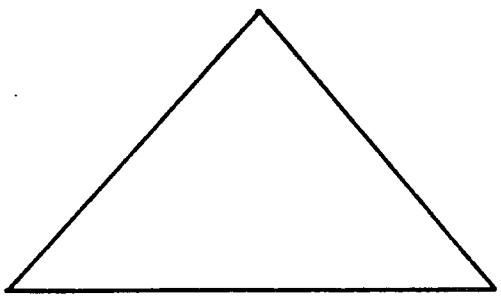
(٤٠)



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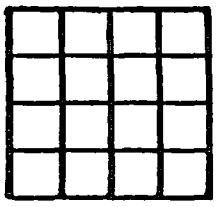
الصفحة ١٢

(٤١)

٩٢ ٤٦ ٣٨ ٩٣ ٧٤

٤١ـ

(٤٢)



٤٢ـ

(٤٣)

١٣ (١٤)	٢٠ ٢١	١٩ ٢٩
١٣ ٣٣	٢٨ ٢٣	٢٢ ٢١
١٥ ٢٥	٢٦ ٢٧	٢٤ ١٤

٤٣ـ

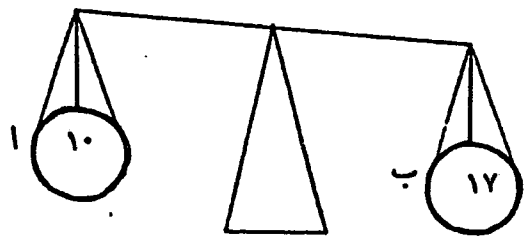
(٤٤)

	الكسر
٢ مقسومة على ٤	٢/١
٥ مقسومة على ١٥	٣/١
٣ مقسومة على ١٢	
٨ مقسومة على ٧٢	
٤٠ مقسومة على ٤٠	
٢٠ مقسومة على ١٠٠	

٤٤ـ

٤٥ـ

(٤٥)



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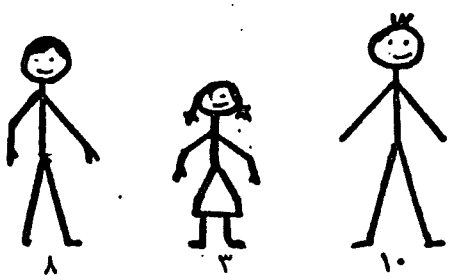
(٤٦)



_ _ _ سنين

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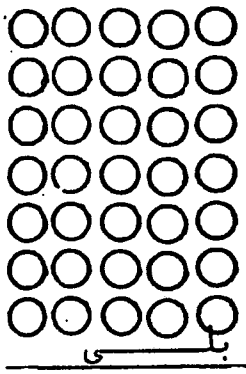
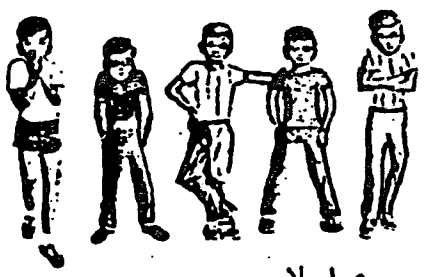
(٤٧)



بلى



٥ اولاد

_ _ _ _ _ _ بلى

٤٨ـ

(٤٨)

حسين

١٤ سنة

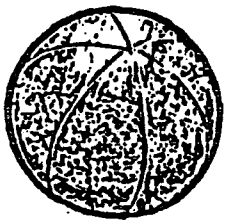
رهام

٨ سنوات

_ _ _ _ _ سنين

647

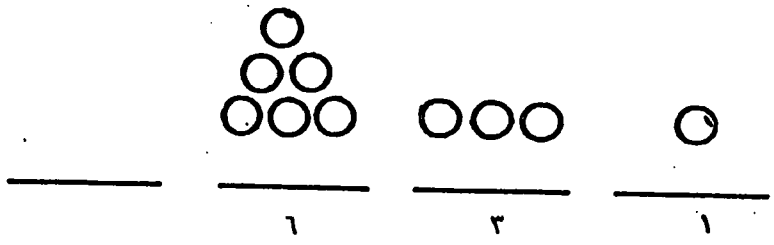
(٤٩)



٣١ قرش

٤٩ـ

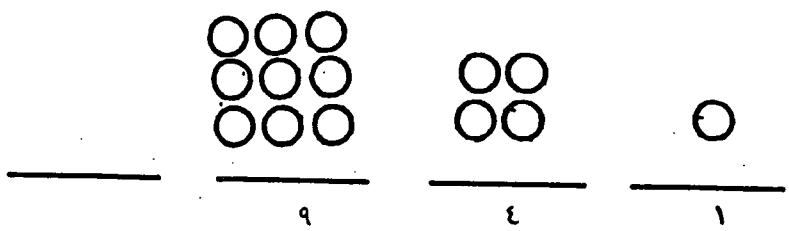
(٥٠)



١ ٣ ٦

٥٠ـ

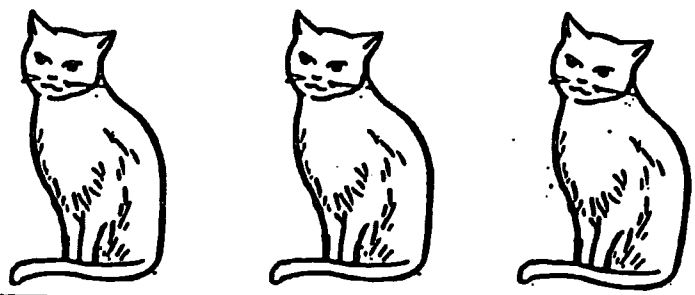
(٥١)



١ ٤ ٩

٥١ـ

(٥٢)



٢ سنوات ٥ سنوات ٧ سنوات

سنوات

سنوات

سنوات

٥٢ـ

(١) ضع علامة صح ( ) تحت الجمل المساوى فى الحجم للجمل الذى بداخل الصندوق على اليسار .

(٢) ضع علامة صح ( ) تحت الشكل المماثل تماما للشكل الذى بداخل الصندوق على اليسار .

(٣) ضع علامة صح ( ) تحت الصندوق الذى يحتوى على نفس العدد من الكراسى مثل نفس عدد الاطفال فى الصندوق الذى على يسارك .

(٤) هنا صف من الاشكال . الشكل المظلل شكل مستطيل من فضلك ظلل الدائرة من هذه الاشكال .

(٥) ارسم عدد من الاطباق للفناجين حتى يصير عدد اطباق الفناجين نفس عدد الفناجين .

(٦) كم يمثل هذا الجزء المظلل بالنسبة للشكل ككل ؟ .

(٧) ظلل نصف هذه الدائرة ؟ .

(٨) يوضح هذا الرسم البيانى الفواكه المحببة لمجموعة من الاطفال .

" يوجد هنا تفاح وكمثرى وبرتقال وموز وفراولة " .

ما هى الفاكهة التى اختيرت بواسطة اكبر عدد من الاطفال ؟ .

هل هناك عدد من الاطفال يحبون الموز اكثر من الفراولة ؟ .

ما هما الفاكهتان اللتان اختيرتا بواسطة نفس العدد من الاطفال ؟ .

(٩) والان يوجد امامك صندوق كبير به عدد من الدجاج

والمطلوب منك ان ترسم حلقات لتقسمهم الى مجموعات كل مجموعة مكونة من اربعة ٠

(المجموعة الاولى عملت لك كمثال لتعمل مثله) ٠

اكتب العدد المتبقى فى الصندوق الفارغ فى اليمين ٠

(١٠) انظر الى الصور التى امامك فى الصف ٠

ضع علامة صح ( ) تحت الصورة التى تحتوى نفس العدد من العربات مثل عدد المنازل التى فى الصورة الموضحة امامك ٠

(١١) امامك صندوق كبير به عدد من الحمير ٠

ارسم حلقات لتقسيمهم الى مجموعات كل مجموعة مكونه من ١٠ ٠ ثم اكتب العدد المتبقى فى الصندوق الفاضى على يمينك ٠

(١٢) امامك صندوق به عدد من الارانب ٠

ارسم حلقات لتقسيمهم الى مجموعات كل مجموعة مكونة من ثمانية (٨) ٠

ثم اكتب العدد المتبقى فى الصندوق الذى على يمينك ٠

(١٣) يوضح هذا الرسم البيانى الحيوانات المحببة لمجموعة من عائلات الفلاحين ٠

يوجد هنا الدجاج والارانب والاوز والاغنام والحمير ٠

كم عائلة تفضل اقتناء الدجاج ؟ ٠

اى الحيوانات اختيرت بواسطة اقل عدد من الفلاحين ؟ ٠

هل هناك عدد من عائلات الفلاحين يحبون الارانب اكثر من الحمير ؟٠

(١٤) عد الاسماك التى امامك ثم ضع الاجابة فى الصندوق الذى

يمينك او فى المكان الفاضى الذى على يمينك .

(١٥) ضع حلقة حول العدد الاكبر من هذه الاعداد . (اكبر الاعداد)

(١٦) ضع حلقة حول اصغر الاعداد .

(١٧) الان امامك تسع صناديق . ثمانية من هذه الصناديق فارغة . ابدا من الصندوق الذى يحتوى على الرقم ١٠ بداخله ثم اضف العدد الذى فوق السهم الذى يلى ذلك الصندوق مباشرة . ثم ضع الناتج فى الصندوق التالى مباشرة ثم ابدا ثانية من هذا الصندوق ، اضف العدد الذى فوق السهم الذى يليه مباشرة ثم ضع الناتج فى الصندوق التالى مباشرة .

كرر هذه العملية الى ان تنتهى بملئ كل الصناديق .

(١٨) الان امامك مجموعة من الاشياء . عد هذه الاشياء ثم اكتب الناتج مثل المثال الموضح امامك تماما .

(١٩) امامك فئات من الاشياء . احسب عدد هذه الاشياء ثم اكتب الاجابة مثل المثال الموضح امامك .

عدد الموز = ٣ × ٢ = ٦ او ثلاثة مضروبة فى اثنين تساوى ستة .

(٢٠) امامك فئات من الاشياء . احسب عدد هذه الاشياء بطريقتين على ان تحصل على نتيجة واحدة فى كلتا الحالتين . تماما مثل المثال الموضح امامك (عدد الازهار هو ٦ + ٦ = ٢ × ٦ = ١٢ .

(٢١) امامك ثلاث مربعات كبار ٠

كل مربع من هذه المربعات الكبار يحتوى على عدد من المربعات الصغيرة بداخله ٠ بعض من هذه المربعات مظلله ٠ اطرح عدد المربعات المظللة من العدد الكلى للمربعات الصغيرة فى كل حالة ٠ تماما مثل المثال الموضح امامك ٠ اكمل الحالتين الاخرتين تماما مثل المثال الموضح امامك تماما ٠

(٢٢) اكمل سلسلة الاعداد الموضحه امامك ٠

(٢٣) اذا اضيفت عشرة الى خمسة عشر يعطى خمس وعشرون والان اكتب فى السطر الاول عددان اخران اذا اضيفتا يعطى خمس وعشرون ٠

فكر ايضا فى عددان اخران اذا اضيفتا يعطيان خمس وعشرون ٠ اكتب هذان العددان فى السطر الثانى ٠

(٢٤) العدد ٣٠ يقبل القسمة تماما على العديد من الاعداد ٠ هناك قائمة بالاعداد امامك ٠ ضع دائرة حول العدد الذى يقبل القسمة على ٣٠ بدون باقى ٠

(٢٥) فى عملية الجمع التى امامك ، يوجد احد الاعداد ناقص ٠ اكتب العدد الناقص فى الصندوق الذى امامك فى الورقة حتى تجعل الجمع صحيحا ٠

(٢٦) يوجد امامك ثلاث طرق ا ، ب ، ج

حسن يريد ان يذهب لمحطة الاتوبيس ٠

ما هى الطرق التى يمكن ان توصل حسن لمحطة الاتوبيس ؟
اى من هذه الطرق يمكن ان ياخذه حسن ليصل فى اقل وقت ممكن ؟ ٠

ماهو اقصر الطرق للوصول الى محطة الاتوبيس؟ ٠

(٢٧) هناك عدد ناقص فى عملية الضرب التى امامك ٠
اكتب العدد الناقص فى الصندوق الذى امامك لتجعل العملية صحيحة ٠

(٢٨) يوجد امامك سلسلة من الاعداد ٠ حاول المحافظة على نفس النمط الذى فى المثال الذى امامك ، ثم اكتب العدد التالى الذى يجب ان يوضع فى الصندوق الفارغ الذى امامك ٠

(٢٩) احد الاشارات " + ، - ، × ، ÷ " (اكتب هذه الاشارات على السبورة) ناقصة ٠ اكتب الاشارة الناقصة فى الصندوق الذى امامك حتى تجعل العمليات التى امامك صحيحة ٠

(٣٠) امامك مجموعة من الاعداد ، احد هذه الاعداد فقط يمكن ان يقبل القسمة تماما بدون باقى على نفسه وعلى واحد ٠ ما هو هذا العدد ؟
ارسم حلقة حول هذا العدد الذى يقبل القسمة فقط على نفسه وعلى واحد ٠

(٣١) انظر جيدا للاعداد الموضوعه فى المربعات التى امامك ، ثم حاول ان تكمل بقية المربعات بنفس النمط

الموجود فى الاعداد الاولى ٠

(٣٢) ضع حلقات حول هذه الاعداد التى لا يمكن ان توخذ من ٢٧ ٠

(٣٣) امامك عدد ان ، كل واحد منهم يليه سطر فارغ ٠ فى كل سطر فارغ ، ضع العدد الذى ياتى مباشرة بعد العدد الموجود امامك ٠

(٣٤) امامك صندوقان صغيران ٠

(١) فى الصندوق الاول ، اكتب العدد الذى يقل ٥ عن ١١ ٠

(٢) فى الصندوق الثانى ، اكتب العدد الذى يكبر بمقدار ٦ عن ٩ ٠

(٣٥) المكعب المظلل الذى امامك يزن ١٠٠ جرام ٠

ما هو الوزن الكلى لهذه المكعبات التى امامك ٠

(٣٦) امامك مجموعة من الاشكال ٠ ضع علامة تحت الثلاث اشكال التى يمكن ان تنقسم تماما الى نصفين متساويين تماما فى الشكل والحجم ٠

(٣٧) كم يمثل من الكسر الجزء المظلل فى الشكل الذى امامك ؟

(٣٨) كم جرام يوجد فى نصف كيلوجرام سكر ؟

كم جرام يوجد فى ربع كيلو زبده ؟ ٠

(٣٩) انظر الى الثلاث مربعات التى امامك ٠

يوجد فى هذه المربعات ، بعض الاجزاء المظللة ٠

ضع علامة ( ) تحت المربع الذى ظل نصفه تماما ·

(٤٠) فى الشكل الذى امامك ، ارسم مستقيم فى الوضع الذى يظهر تقسيم الشكل الى جزئين متساويين ·

(٤١) هناك تشابه بطريقة ما فى اربع اعداد من الاعداد الموجودة امامك · ضع حلقة حول العدد المخالف عن هذه الاعداد ·

(٤٢) ظل ربع هذا الشكل ؟

(٤٣) يوجد امامك عديد من المستطيلات ، داخل كل واحد يوجد عددان ·

فى كل حالة ارسم دائرة حول العدد الاكبر ·

الحاله الاولى عملت لك كمثال ·

(٤٤) املا الاماكن التى بالجدول ·

الحالتان الاولتان عملتا لك كمثال تتبعه ·

(٤٥) يوجد امامك ميزان · فى الجانب الاول (ا) يوجد ١٠ ١٠ بليات ، كما يوجد فى الجانب الاخر (ب) ١٧ بلية ·

مع الاخذ فى الاعتبار ان كل البلى متساوى فى الوزن · كم من البلى يمكن ان نضيفه للجانب (ا) حتى يكون الميزان متوازن تماما اى متعادل تماما ؟ ·

(٤٦) يوجد امامك ثلاث اطفال موضح اعمارهم ·

ما هو الفرق فى العمر بين اكبر الاطفال

واصغر الاطفال ؟ ٠

(٤٧) وزع ٣٥ بلية بالتساوى بين خمس اولاد ٠

كم بلية يمكن ان ياخذها كل ولد ؟ ٠

(٤٨) عمر حسين الان ١٤ سنة ٠

كما ان عمر رهام الان ٨ سنوات ٠

عندما يكون عمر حسين ٢٣ سنة ، كم يكون عمر

رهام عندئذ ؟ ٠

" ٢٣ سنة يمكن ان تكتب على السبورة " ٠

(٤٩) فى محفظتك يوجد ٢٠ قطعة كل قطعة تمثل ٥ قروش ٠

اشتريت كرة بـ ٣١ قرش ٠

كم قرشا يبقى معك بعد ذلك ؟ ٠

(٥٠) امامك فئات من النقط ٠

ارسم فئة النقط التالية ثم اكتب العدد تحت الخط الذى

امامك ٠

(٥١) هنا ايضا يوجد فئات من النقط .

ارسم فئة النقط التالية ثم اكتب العدد تحت الخط الذى امامك .

(٥٢) يوجد امامك ثلاث قطط موضحة اعمارهم .

ما هو الفرق فى العمر بين اكبر القطط واصغر القطط ؟ .

ما عمر القطة التى بين اكبر القطط واصغر القطط ؟ .

ما هو مجموع اعمار الثلاث قطط ؟ .

BASIC MATHEMATICAL SKILL TEST

Z.A.A.G. KHALID

SCHOOL'S NAME

CHILD'S NAME

DATE COMPLETED

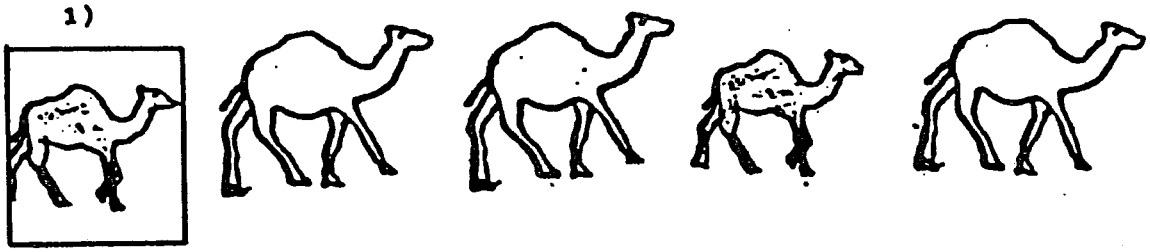
DATE of BIRTH

AGE

SEX

AGE 7 - 9

1)



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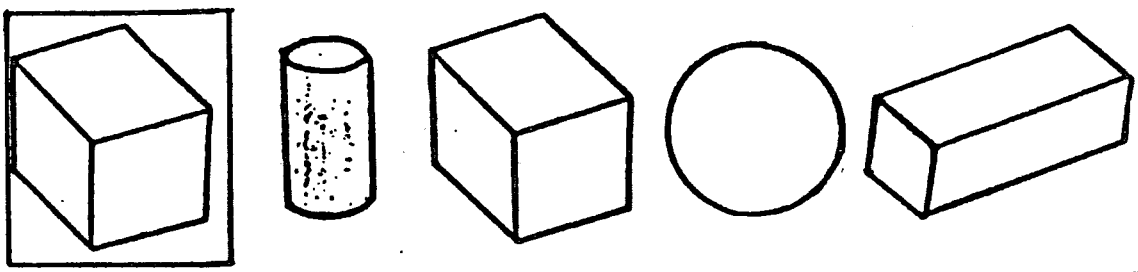

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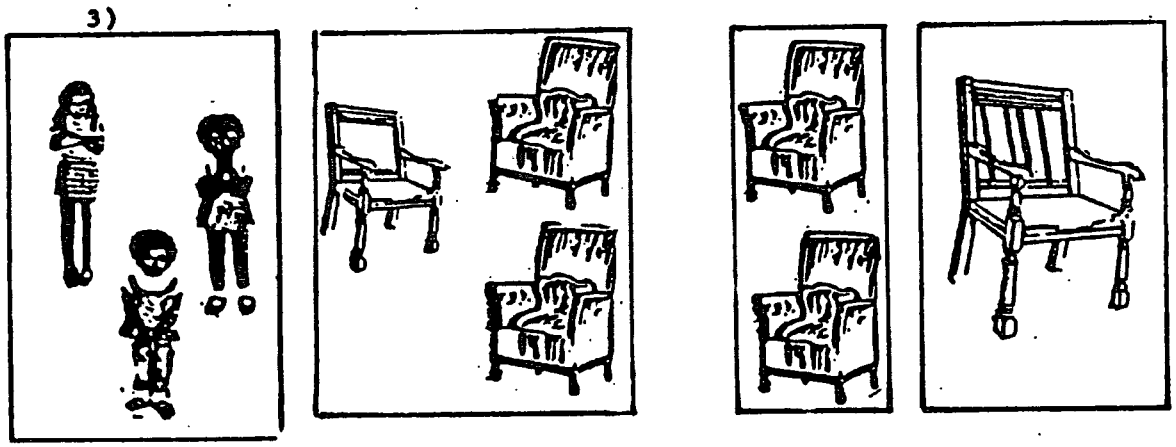

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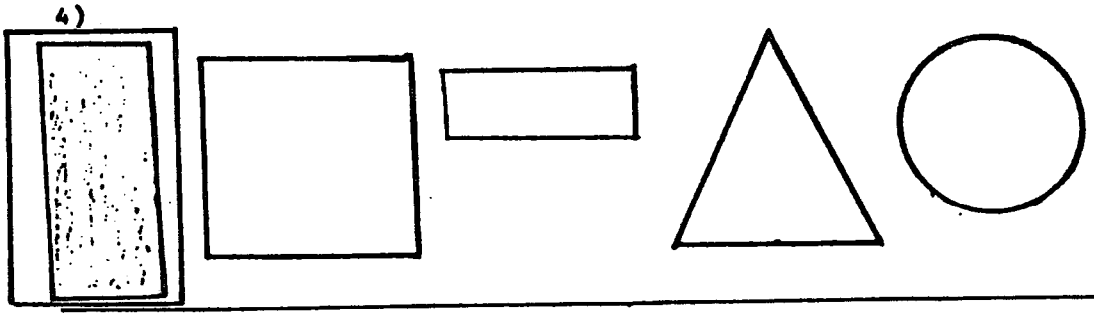

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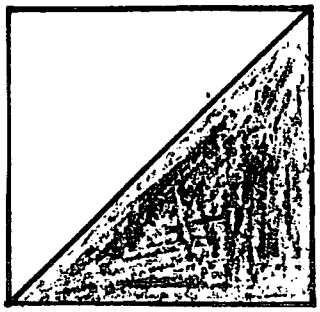
6)



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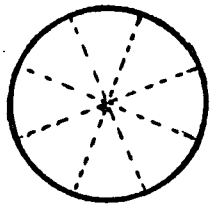

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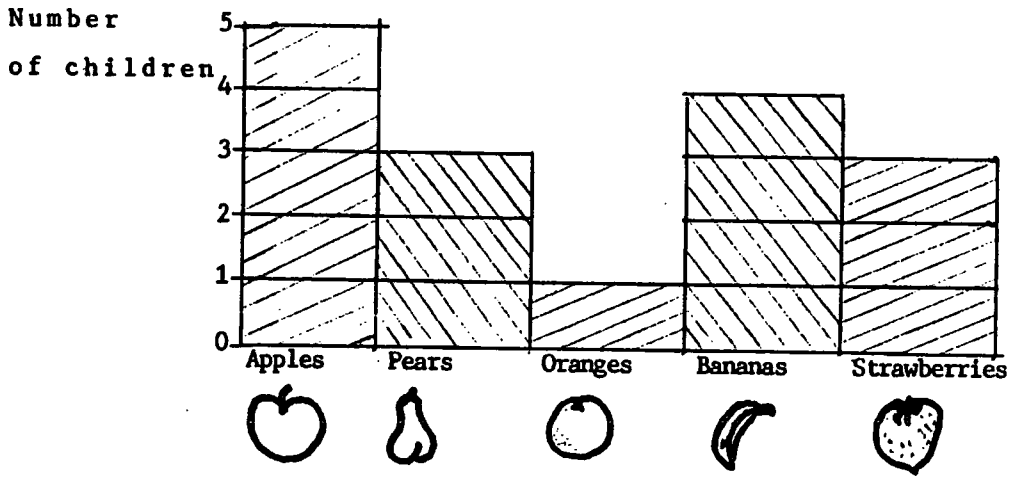
Number of children
5
4
3
2
1
0
Apples
Pears
Oranges
Bananas
Strawberries

_ _ _ _ _ _ _ _ _ _ _ _

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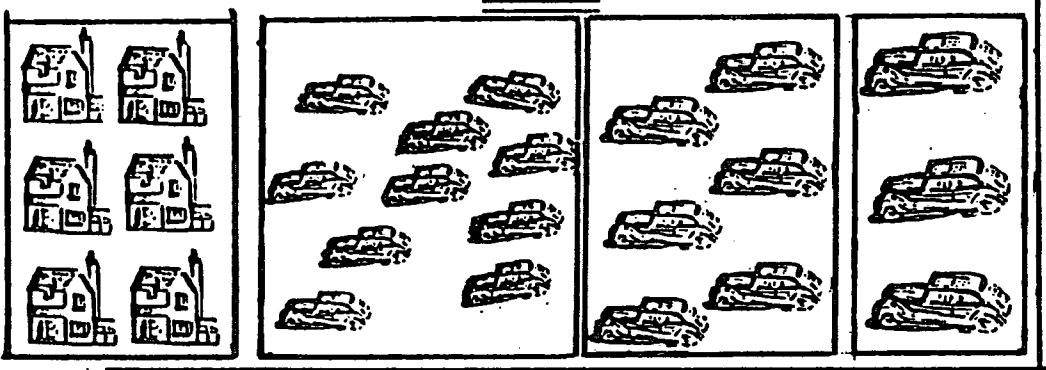
9)

10)



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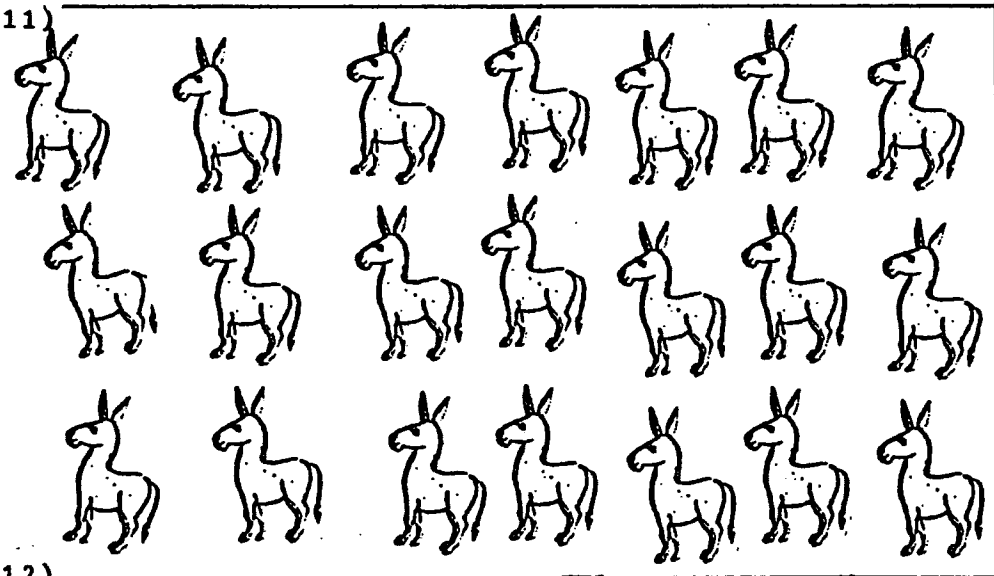

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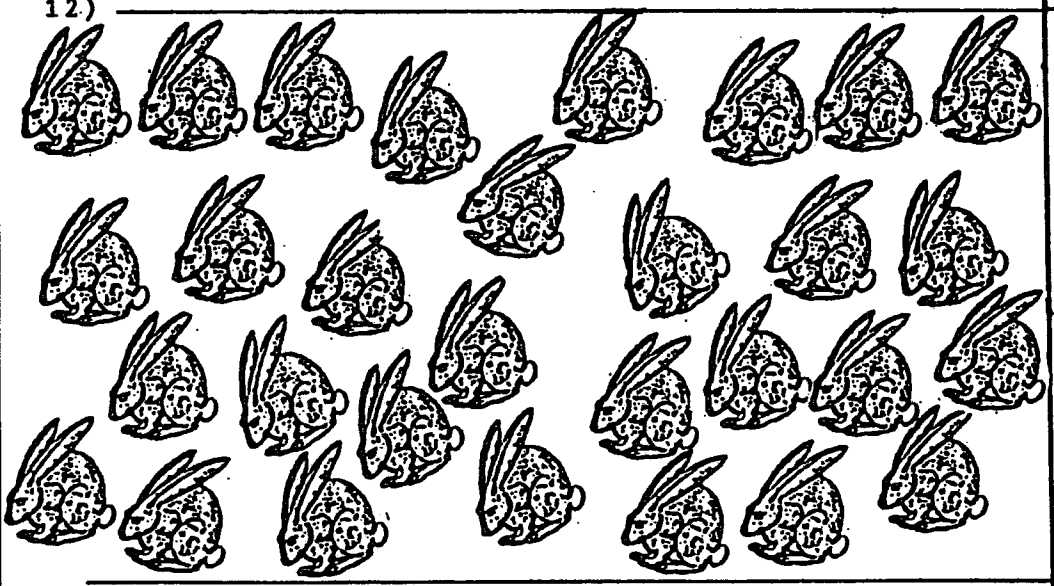

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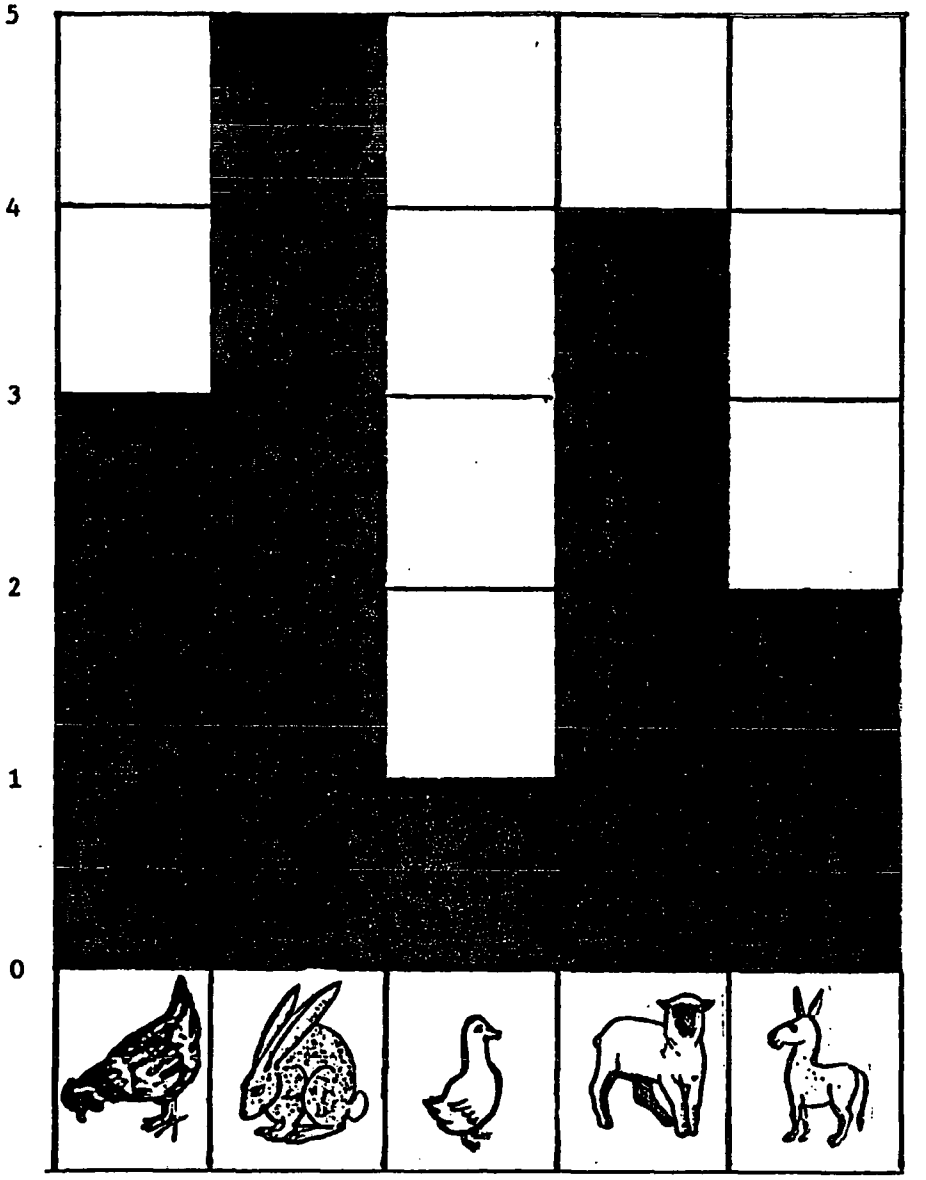
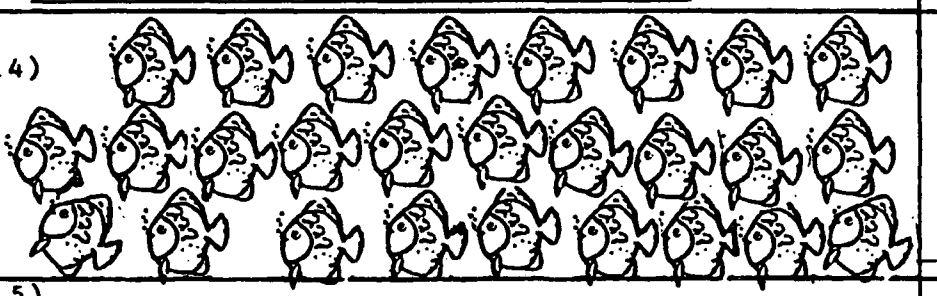


Families

14)



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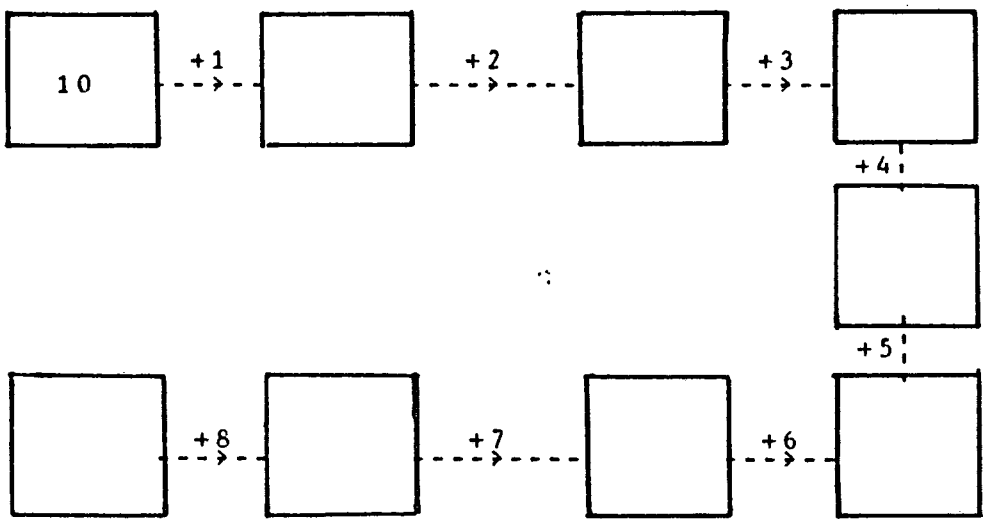
16)

5432	2345	2435	3542	4352

17)



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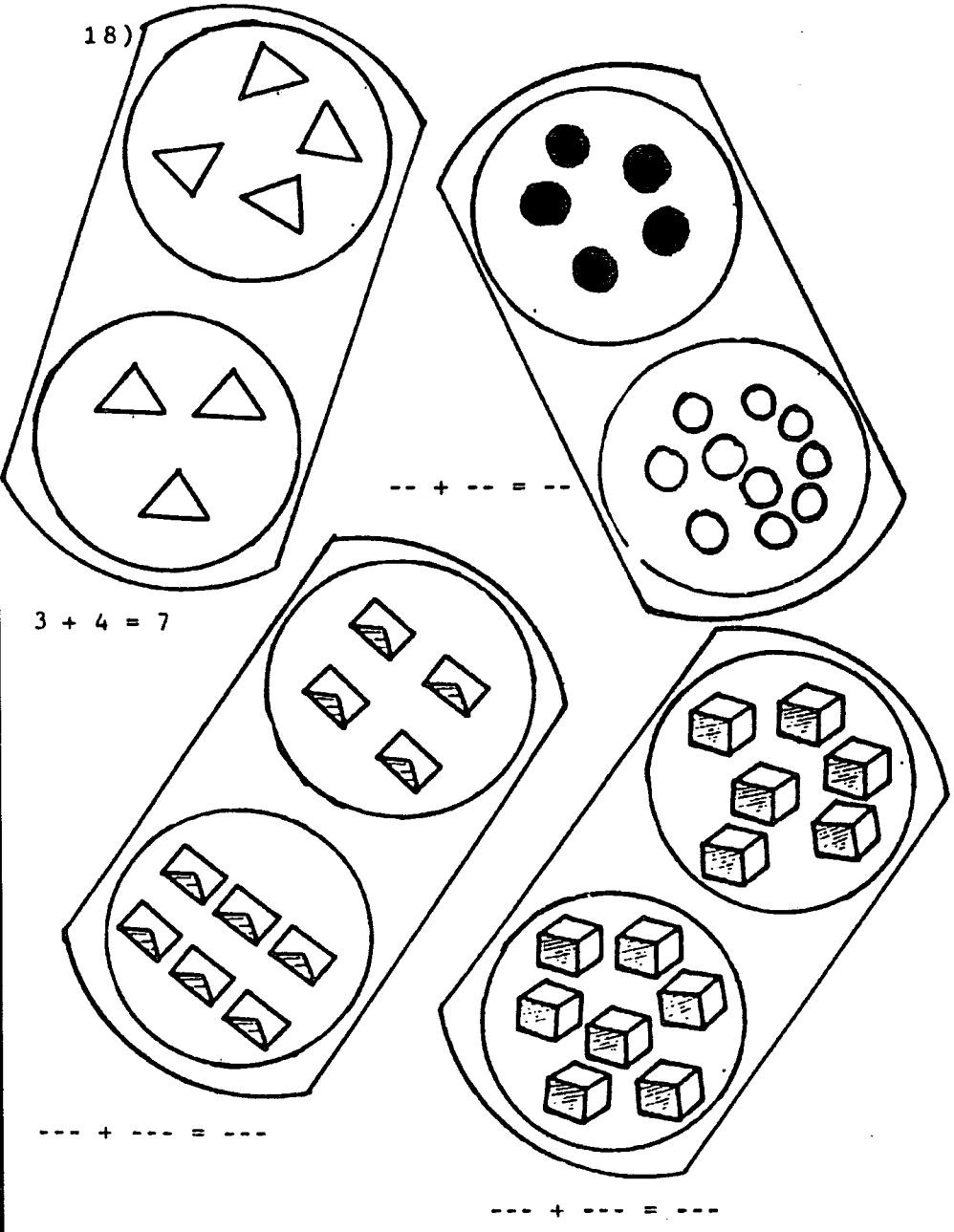

Page 6

19)

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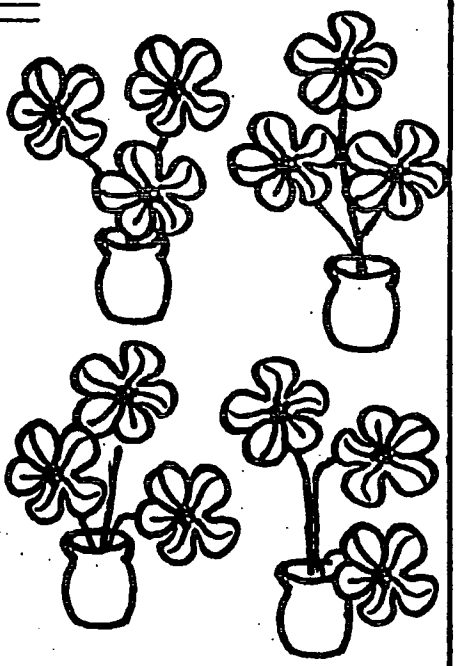

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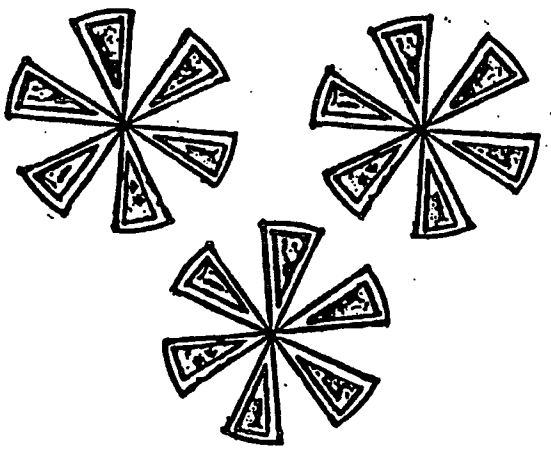

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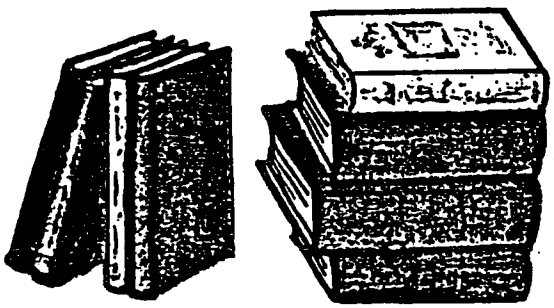
--- x --- = ---



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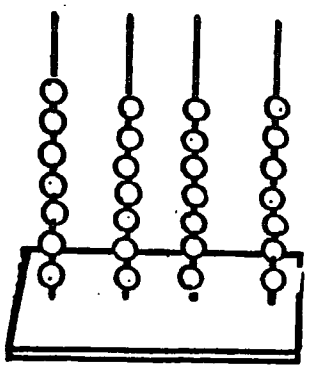

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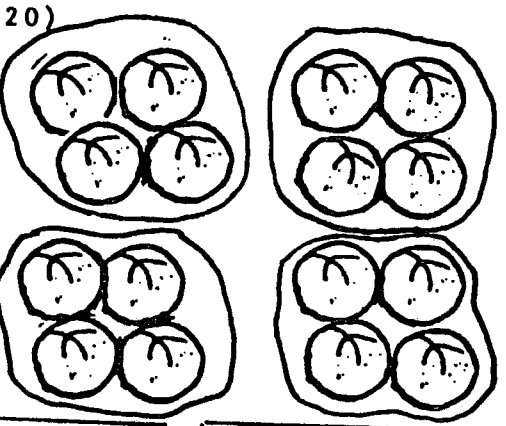
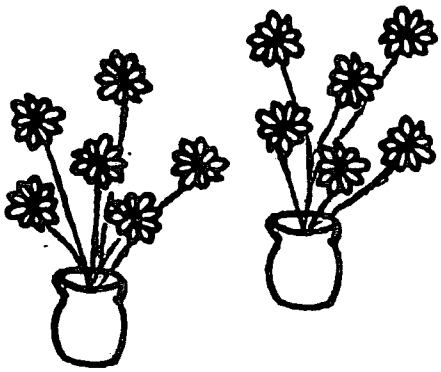


--- x ---

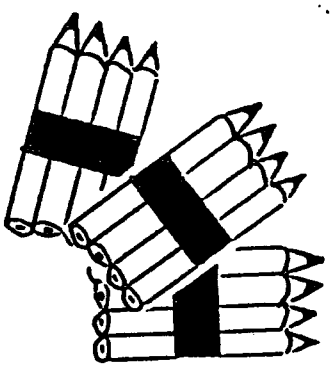
---+---+---+---

---+---+---+---= --- x ---

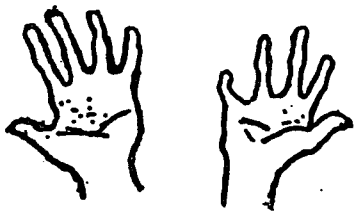
6 + 6 = 2 x 6



6 + 6 = 2 x 6

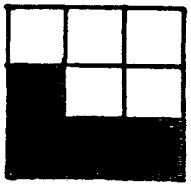


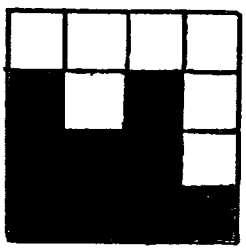
--- + --- + --- = --- x ---

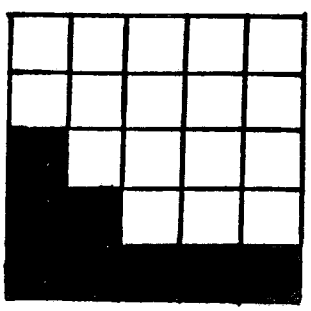


--- + --- = --- x ---

21)







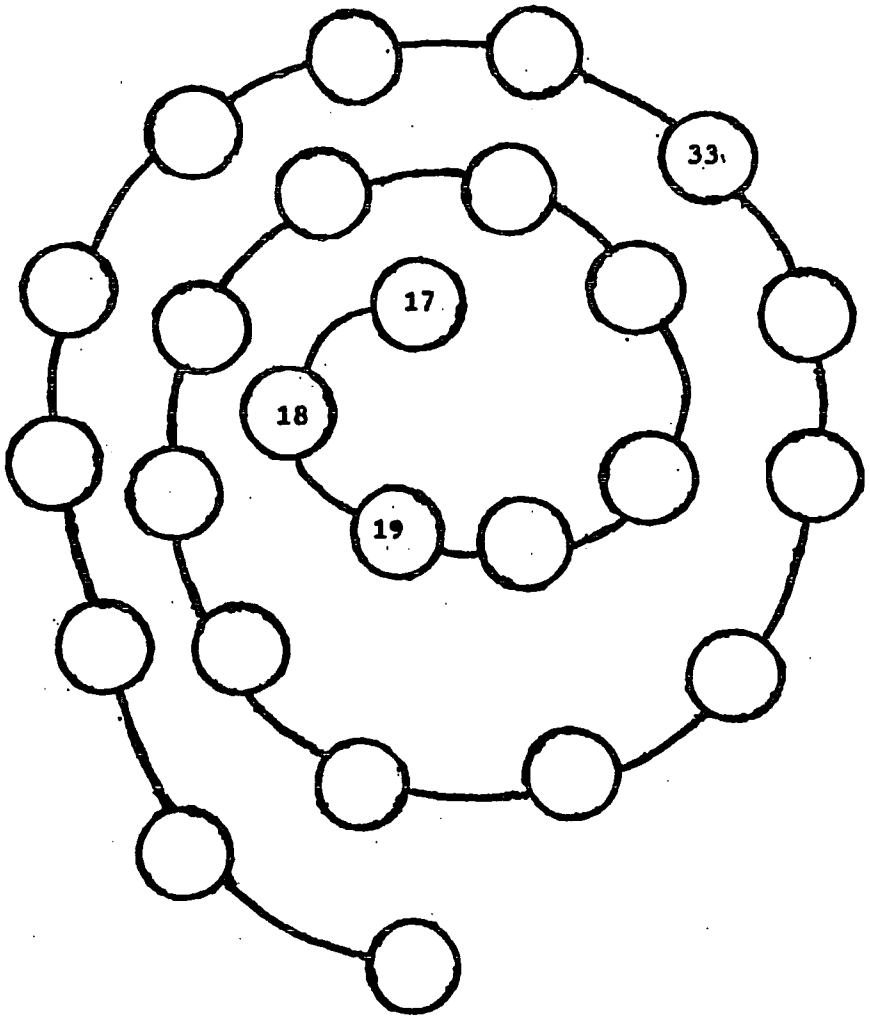
9 - 4 = 5

--- - --- = ---

--- - --- = ---

22)

661



23)

10 + 15 = 25

--- + --- = 25

--- + --- = 25

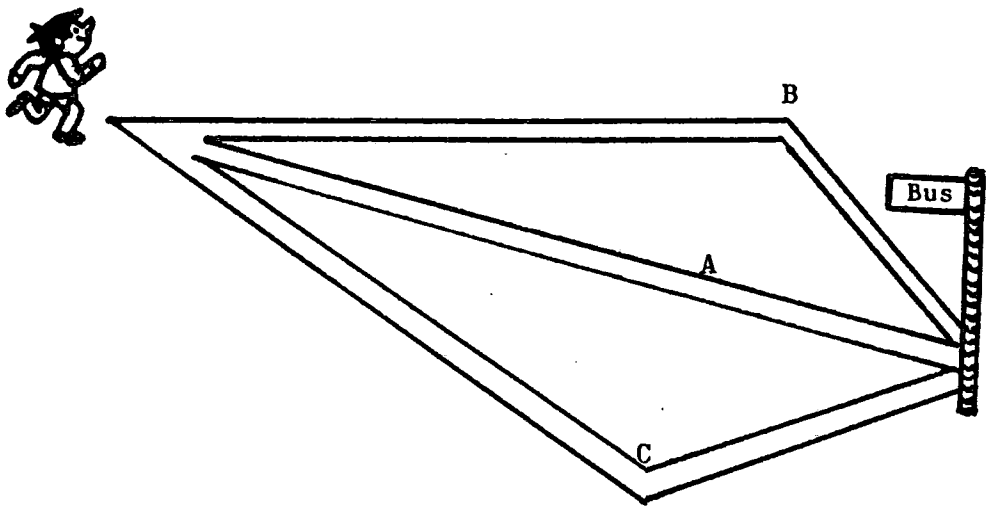
24)

1 2 3 4 5 6 7 8 9 10 11 12 13

25)

7 + ☐ + 3 = 30

26)



27) $7 \times \square = 63$

28) 1, 6, 11, 16, $\square$

29)

$20 \square 4 = 5$

$9 \square 1 = 9$

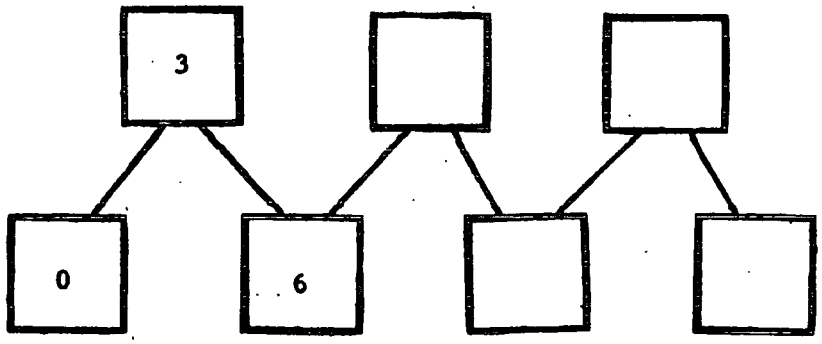
$11 \square 4 = 19 \square 4$

30)

4 14 15 12 16 19 20

31)

662



32)

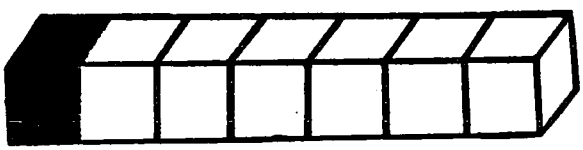
13 20 27 34 41 12 13

33)

312 ___ 115 ___

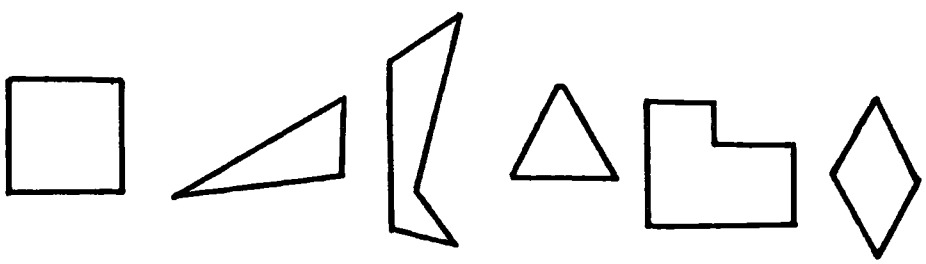
34)

35)

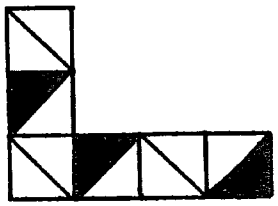


------- grammes

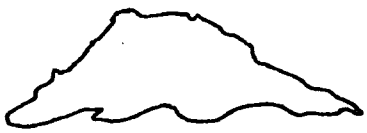
36)

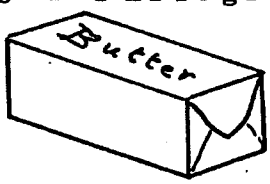


37)



38) 1000 grams = 1 kilogram

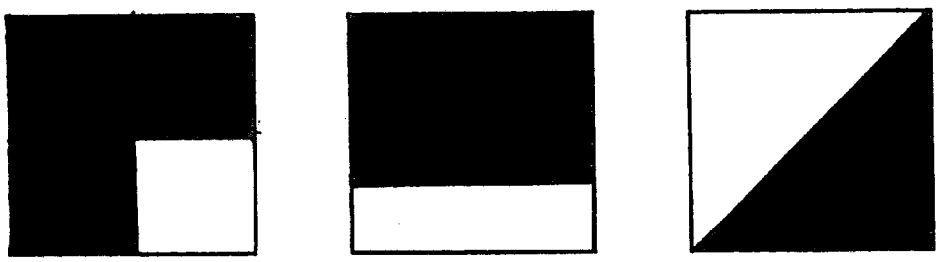




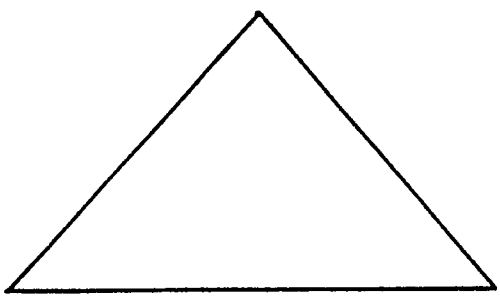
$\frac{1}{2}$ kilogram sugar = _____ grams

$\frac{1}{4}$ kilogram butter = _____ grams

39)



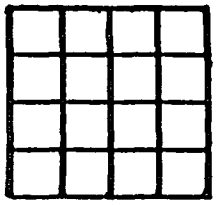
40)



41)

92 46 38 93 74

42)



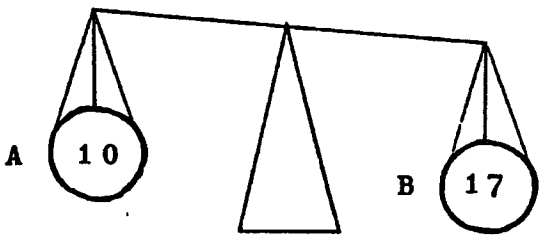
43)

13 (14)	20 21	19 29
13 23	28 23	22 21
25 15	26 27	24 14

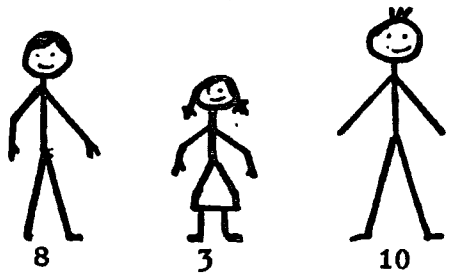
44)

	Fraction
2 out of 4	$\frac{1}{2}$
5 out of 15	$\frac{1}{3}$
3 out of 12	
8 out of 72	
40 out of 40	
20 out of 100	

45)

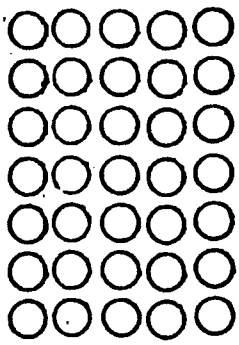


46)

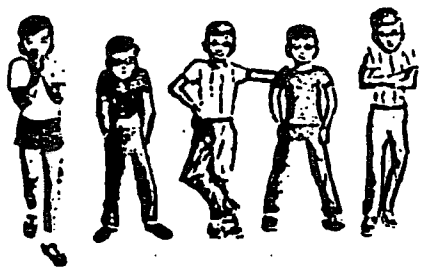


_____ years

47)



marbles



5 boys

___ marbles

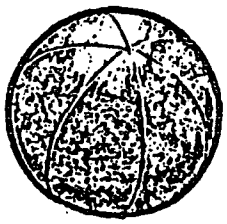
48)

John
14 years old

Betty
8 years old

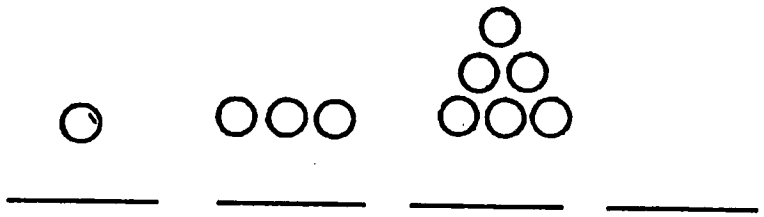
_____ years old

49)



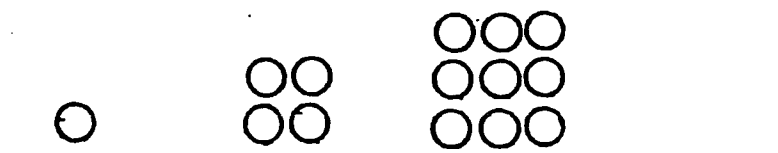
31 p

50)



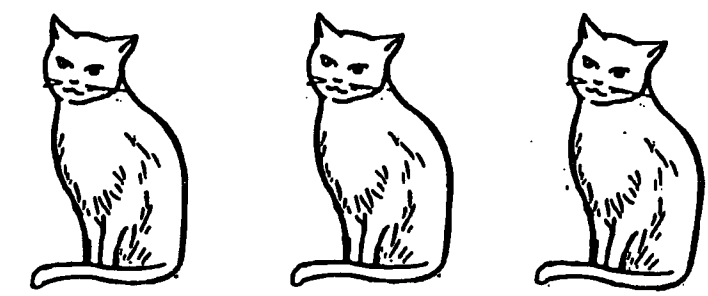
1 3 6 ____

51)



1 4 9 ____

52)



7 years

5 years

2 years

years

years

years

APPENDIX (LVIII)

FORM OF THE INSTRUCTIONS FOR THE ENGLISH TEST 1 (AGE 7 TO 9)

(1) Put a tick under the camel which is equal in size to the camel in the box on the left.

(2) Put a tick under the shape which is the same as the shape in the box on the left.

(3) Put a large tick, under the box which has the same number of chairs in it as there are children in the first box.

(4) Here is a row of shapes. The first, which is shaded, is a rectangle.
You shade in a circle, please.

(5) Draw more saucers until there are as many saucers altogether as there are cups.

(6) What fraction of this shape is shaded?.

(7) Shade in one half of the circle.

(8) This graph shows the favourite fruits of a group of children.

"There are apples, pears, oranges, bananas, and strawberries".
Which is chosen by the largest number of children?.
How many more children like bananas than strawberries?.
Which two fruits are chosen by the same number of children?.

(9) Now we have chickens in a large box.
I want you to draw rings to put them into groups of four.
The first group is done for you.
Write the number you have left over in the empty box on the right.

(10) Look at the pictures in the row. Put a large tick under the picture that has as many cars in it as there are houses in the first picture in the row.

(11) We have a large box with donkeys in it.
Draw rings to put them into groups of 10, and write the number of those left over in the empty box at the end.

(12) This box has rabbits.
Draw rings to put them into groups of 8 and write the number of those left over in the small box at the

end.

(13) This graph shows the favourite animals of groups of farmer's families.
There are chickens, rabbits, geese, sheep, and donkeys.
How many farmer's families have chickens as favourites?.
Which one is chosen by the smallest number of farmer's families?.
How many more family like rabbits than donkeys?.

(14) Count the number of fishes and put the answer in the empty box on the right.

(15) Put a ring round the biggest of these numbers.

(16) Draw a ring round the smallest of these numbers.

(17) Now you have nine boxes. Eight of them are empty. Start from the box which has number 10 in it and then add the number over the following arrow. Then put the sum in the next box and start from that box, adding the number over the next arrow and put the sum on the following box.
Do this until you finish all boxes.

(18) Now you have groups of objects. Count these objects and write down the sum in the same way as the first, which is done for you.

(19) You have sets of objects. Calculate the number of objects and write down the answers.
The first set is done for you (the number of bananas are 3 x 2 = 6 or three multiplied by two equals six).

(20) You have sets of objects. Calculate the number of objects in two ways, both having the same answers. One of sets is done for you (The number of flowers are 6 + 6 = 2 x 6 = 12).

(21) You have on your paper three big squares. Each one has small squares in it.
Some of these squares are shaded.
Subtract the shaded squares from the total number of small squares in each case.
The first one is done for you. Complete the other two in the same way.

(22) Complete the missing numbers in this series.

(23) Ten and fifteen add up to twenty five.
Write down on the first line given two other numbers which add up to twenty five.

Now you think of two more numbers which add up to twenty five.
Write those on the second line.

(24) 30 is a number that can be divided exactly by several numbers.
There is a list of numbers on your paper.
"Draw circles round those which divided exactly into 30".

(25) One of the number is missing from this sum.
Write the missing number in the box to make the sum right.

(26) On your paper there are three roads, A, B, and C. Peter wishes to go to the Bus Station.
Which of these roads leads to the Bus Station.
Which way can he go to take the shortest time.
Which of these is the shortest distance.

(27) There is a missing number in this sum.
Write the missing number in the box to make the multiplication right.

(28) There are a series of numbers. If we keep to the same pattern, which is the next number to put it in the empty box.

(29) One of the signs "+, -, x, /" (Write these on the board) is missing from this sum. Write the missing sign in the box to make the sum right.

(30) One of these numbers can only be divided exactly by itself and by one. Which is it?.
Draw a circle round it.

(31) Put the right number in the empty box.

(32) Draw circles round those numbers which cannot be taken away from 27.

(33) Two numbers each with a line after it. On each line write the number which comes after the one that is there.

(34) Two small boxes. In the first write the number which is 5 less than 11.
In the other write the number which is 6 more than 9.

(35) The shaded end of this block weight 100 grams.
How much does the whole block weight ?.

(36) Here are some shapes. Put crosses in the three shapes which could be cut in half so that both halves are exactly the same size and shape.

(37) What fraction of this shape is shaded?.

(38) How many grams are there in half a kilogram of sugar?.
How many grams are there in a quarter kilogram of butter?.

(39) Look at the three squares. All have some part shaded. Put a large tick in the one having exactly a half shaded.

(40) In the shape draw a line to show where you would cut it to make it into halves.

(41) Four of these numbers are alike in some way. Draw a ring round the number that is different from all the rest.

(42) Shade one quarter of this shape.

(43) You have in your paper two numbers inside each box. In each case draw a circle round the bigger number.
The first one has been done for you as an example?.

(44) Fill in the spaces in the table.
The first two have been done for you.

(45) Here is a balance. On side A there are 10 marbles and on side B there are 17.
All the marbles are the same weight.
How many marbles must we add to side A to make the sides balance exactly?.

(46) Here are 3 children with their ages. What is the difference in age between the oldest and youngest?.

(47) Share the 35 marbles equally among the 5 boys.
How many marbles would each boy get?.

(48) John is 14 years old now, and Betty is 8. When John is 23 years old, how old will Betty be?.
"23 years old can be written on the board".

(49) You have twenty 5p coins in your purse. You buy a ball costing 31p.
How much money have you left?.

(50) Here are sets of dots.
Draw the next set and write the number below the line.

(51) Here are sets of dots.
Draw the next set and write the number below the

line.

(52) Here are three cats with their ages.
What is the difference in age between the oldest and youngest?.
How old is the cat between the eldest and the youngest?.
What is the total age of the three cats?.

اختبار مهارات الرياضيات عمر ٩ - ١١ سنة

زينب احمد عبد الغنى خالد

اسم المدرسة :-

اسم التلميذ :-

تاريخ الاختبار :-

تاريخ ميلاد التلميذ :-

العمر :-

الجنس :-

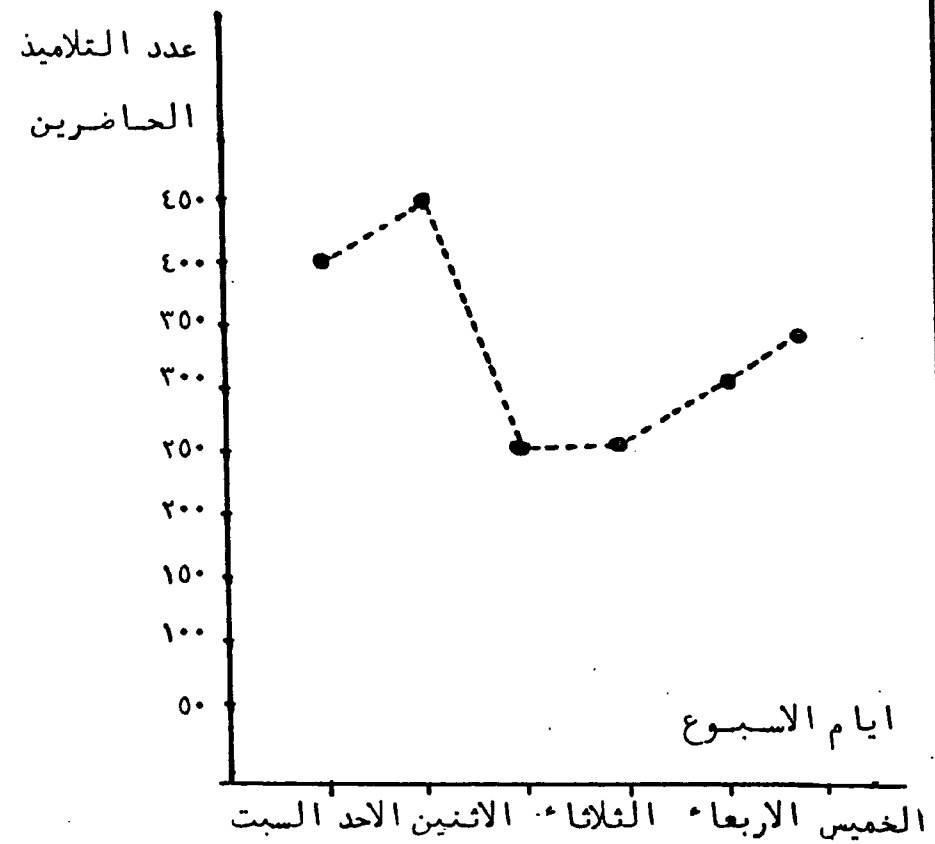
درجة التلميذ فى مادة الحساب

لنصف السنة الدراسية :-

الصفحة الاولى ١

(١) يوضح الشكل البيانى التالى عدد الاطفال الحاضرين فى المدرسة فى كل يوم من ايام الاسبوع ، انظر الى الشكل الاتى واجب عن الاسئلة الاتية :

عدد التلاميذ الحاضرين فى المدرسة خلال احد الاسابيع



ما هو اليوم الذى كان عدد الحاضرين فيه اكبر ما يمكن ؟

ما هواليوم الذى كان عدد الحاضرين فيه اقل من اى يوم اخر ؟

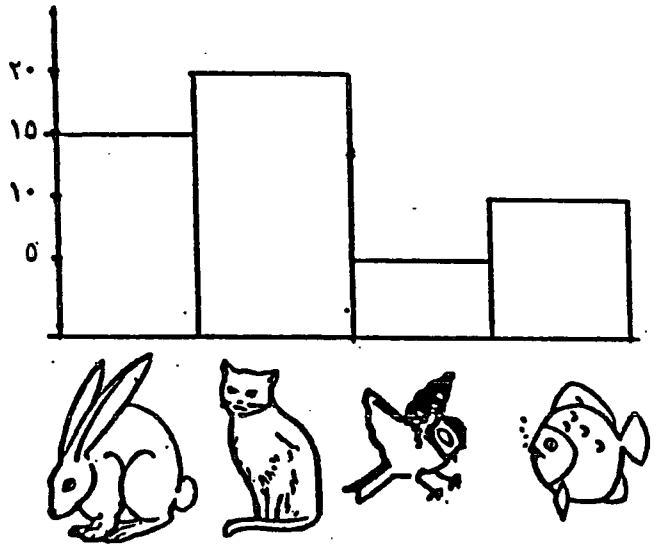
كم كان عدد الاطفال الحاضرين يوم السبت؟

اذكر عدد الحاضرين يوم الاثنين ؟

---

(٢)

يوضح الشكل البيانى التالى عدد التلاميذ فى فصل مدرسى الذين يربون فى منازلهم الارانب او القطط او العصافير او السمك بحيث كل تلميذ يربى نوع واحد فقط .



ما هو الطير او الحيوان الذى يربيه اكبر عدد من التلاميذ ؟

.....

هل عدد التلاميذ الذين يربون القطط اكبر من عدد التلاميذ الذين يربون العصافير ؟

.....

ما هو الحيوان او الطير الذى يربيه عدد خمس تلاميذ فقط ؟

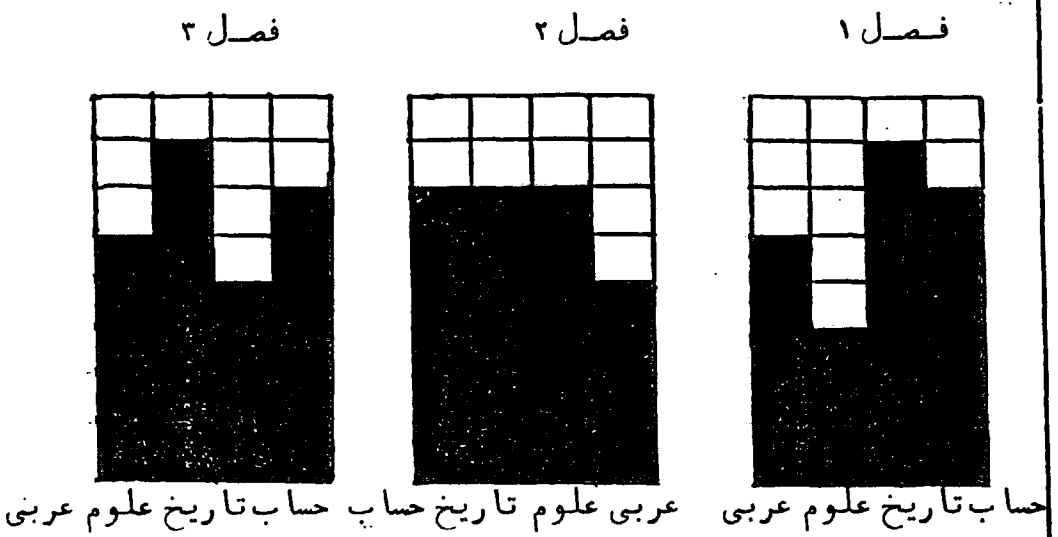
.....

(٣)

توضح الأشكال البيانية التالية متوسطات درجات تلاميذ ثلاث فصول مدرسية فى كل مادة . انظر الى الاشكال التى امامك ثم اجب الاسئلة التالية .

الصفحة الثالثة (٣)

(٣)



اى المواد فى الفصل الثالث (٣) حصلت علي اعلى المتوسطات ؟

.....

ما هى المادة التى حصلت على اقل المتوسطات فى الفصل الثانى (٢) ؟

.....

ما هو الفصل الذى حصل على اقل المتوسطات فى اى مادة من المواد ؟

.....

فى اى فصلين كان هناك متوسط ٢٠ على الاقل فى مادة واحدة ؟

.....و.....

فى اى الفصلين كان هناك نفس متوسط الدرجات فى الحساب ؟

.....و.....

فى اى الفصول حصل على اقل المتوسطات فى مادة العلوم عن المواد الاخرى ؟

.....

(٤) 676

رسمت خريطة بمقياس رسم ١ سنتيمتر لكل ٢٠ كيلو متر على الحقيقة .

اوجد المسافة الحقيقية بين مكانين التى يمثلها على الخريطة مستقيم طوله ٢/٧ سنتمتر ؟

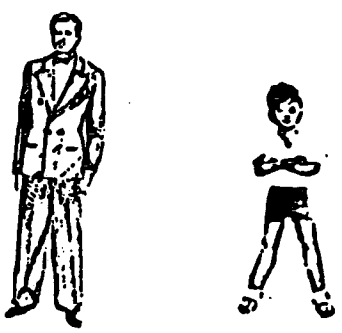
.....كيلو متر .....

طول حسن ١٢٠ سنتيمتر ، وطول والده ١٨٠ سنتمترا .

فما نسبة طول حسن الى طول والده ؟

طول حسن

طول والده

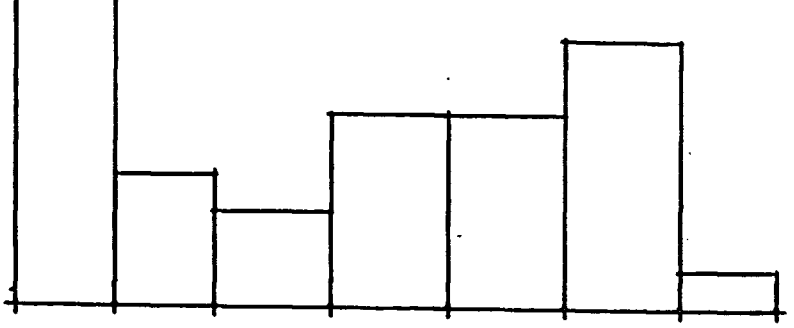


.....

(٦)

يوضح الجدول الاتى كيف سامى يقضى يوما من ايام اجازته ٠

٢/١	٤	٣	٣	٢/٣	٢	١٠
ساعة	ساعات	ساعات	ساعات	ساعة	ساعة	ساعات
لبس	مشاهدة التليفزيون	لعب	سباحة	اكل	قراءة	نوم



ما هو نسبة ما قضى معا فى النوم والقراءة بالنسبة الى ٢٤ ساعة ؟

.....

ما هو نسبة ما قضى فى السباحة واللعب معا بالنسبة الى ٢٤ ساعة ؟

.....

ما هو نسبة ما قضى فى مشاهدة التلفزيون بالنسبة الى ٢٤ ساعة ؟

.....

ما هو نسبة ما قضى فى اللبس والاكل والنوم معا بالنسبة الى ٢٤ ساعة ؟

.....

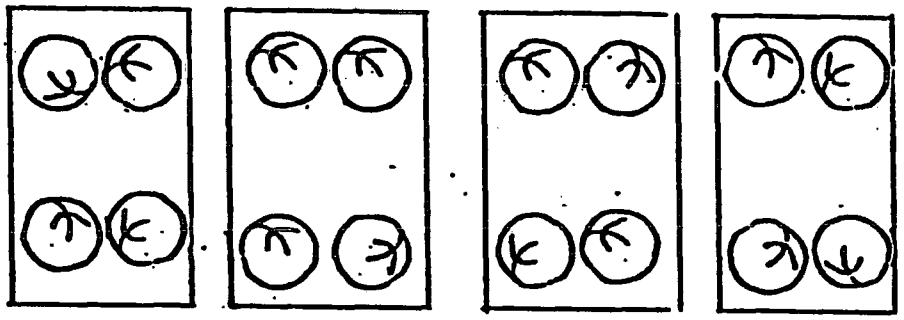
الصفحة السادسة (٦)

(٧)

يوجد اربع برتقالات فى كل صندوق من الصناديق المرسومة امامك . ما هو عدد البرتقال الموجود فى كل الصناديق التى امامك ؟

اكتب الاجابة من

فضلك فى السطر المنقط .



..... x ..... = ... برتقالة

(٨)

ضع اى عددين بحيث يكون ناتج قسمتهما ٣ ؟

..... ÷ ..... = ٣

(٩) ضع العدد الناقص لكى تجعل عملية الجمع التالية صحيحة ؟

١ ٢
١ ٣
+ .....
٣ ٨

(١٠)

ضع اى عددين بحيث يكون ناتج طرحهما ٥٠ ؟

... - ... = ٥٠

(١١)

ضع اى عددين بحيث يكون ناتج ضربهما ٥٠ ؟

..... × ..... = ٥٠

(١٢)

ضع دوائر حول الاعداد فقط التى تقبل القسمة على ٢ بدون باق من مجموعة الاعداد الموجودة امامك فى الورقة ؟

٥٣ ٤٤ ٣٣ ٢٥ ٣٠ ٣٠٤ ٥٤٦

(١٣)

ضع دوائر حول الاعداد الزوجية فقط من مجموعة الاعداد الموجودة امامك فى الورقة ؟

٣٠ ٤٢ ٣ ٥ ٧ ٨٩ ١٨ ٨٧ ٣٢ ١٣

(١٤)

ماهى نوع العملية التالية من العمليات الاربع الاساسية ؟

ضع حلقة او دائرة حول الاجابة الصحيحة من الاجابات التالية .

٣٥٥
١١
٣٤٤

جمع طرح ضرب قسمة

(١٥) الصفحة الثامنة (٨)

ما هى نوع العملية التالية من العمليات الاربع الاساسية ؟

ضع حلقة او دائرة حول الاجابة الصحيحة من الاجابات التالية ؟

٤٩

٥

٢٤٥

جمع طرح ضرب قسمة

---

(١٦) ☐ + ٣٣ = ○○

ما هو العدد الناقص الذى يجب وضعه بدلا من ☐ فى عملية الجمع السابقة ؟

.....

---

(١٧)

٧٧ + ا = ٩٢

ما هو العدد الناقص الذى يجب وضعه بدلا من ا فى عملية الجمع السابقة ؟

.....

---

(١٨)

٢٧٠ ÷ ١٥ = ١٨

ما هى الاجابة الصحيحة لعملية القسمة التالية ؟

٢٧٠ ÷ ١٨ = ...

.....

(١٩)

٢٣ × ١٤ = ٣٢٢

سوف تساعدك المعلومة السابقة على الاجابة على الاسئلة التالية ٠

اكمل العدد الناقص فى كل عملية من عمليات الضرب التالية ٠

٢٣ × ٧ = ٠٠٠٠٠٠

٢٣ × ١٤ = ٠٠٠٠٠٠٠

٢٣ × ٢٨ = ٠٠٠٠٠٠٠

(٢٠)

انظر الى المثالين التاليين جيدا

٢ × ٣ = ٦ ٢ × ٦ = ١٢

٨ × ٣ = ٢٤ ٨ × ٦ = ٤٨

الان اكتب العدد الناقص فى المسالة التالية

٢ × ١٥ = ٣٠

٨ × ١٥ = ٠٠٠٠٠٠

(٢١)

٤٤ × ٣٧ = ١٦٢٨

سوف تساعدك المعلومة السابقة على الاجابة على الاسئلة التالية ٠

اكمل العدد الناقص فى كل عملية من عمليات الضرب التالية ؟

٤٤٠ × ٣٧ = ٠٠٠٠٠٠٠٠

٤و٤ × ٣٧ = ٠٠٠٠٠٠٠٠

(٢٢)

٢٤ مضروبة فى ٢٦ تساوى ٦٢٤ .

٢٤ × ٢٦ = ٦٢٤

ما هو ناتج قسمة ٦٢٤ على ٢٤ ؟

٦٢٤ ÷ ٢٤ = ...

(٢٣)

هناك عدد ناقص فى كل عملية من العمليات التالية .
اكتب الاعداد الناقصة فى المكان الخالى حتى تجعل العملية صحيحة ؟

٩ + .. = .. + ٨ + ...

١٢ × ... = ١٦٨

٨ × ... = ٤

٣٢ − ١٧ = ٨ + ...

٤ ..... ٣	٦.....٣
+ ٢ ٧ ١	+ ...٨...
٦ ٢ ...	٤ ٢ ٩

الصفحة الحادية عشر (١١)

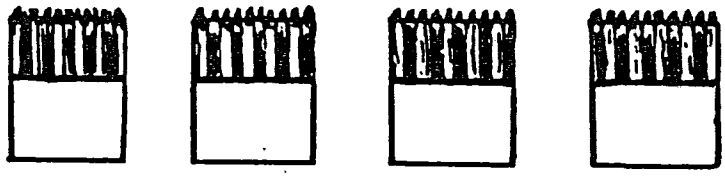
(٢٤)

مرسوم امامك اربع علب اقلام الوان .

يوجد عشر اقلام فى كل علبة .

اذا اعطيت بعض هذه الاقلام الى ٣١ طفل

بحيث كل طفل اعطى قلما واحدا .



٣١ طفل

كم قلم يبقى من هذه الاقلام ؟

.....

(٢٥)

الجدول التالى يعطى تاريخ الميلاد لخمس اطفال :

	اليوم	الشهر	السنة
احمد	١٣	مارس	١٩٥٧
حسن	٢٢	يناير	١٩٥٢
سامى	١٥	يونيو	١٩٥٢
رامى	١٦	اغسطس	١٩٥٧
سيد	٢٦	فبراير	١٩٥٥

من هو اكبر الاطفال ؟ .....

من هو اصغر الاطفال ؟ .....

الصفحة الثانية عشر (١٢)

(٢٦)

رتب هذه الاعداد ، مبتدئا من الاصغر فالاكبر .

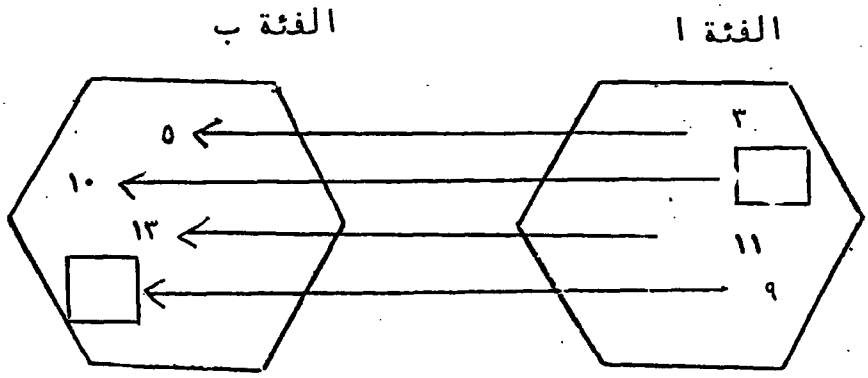
٩٢ ١٣ ٤٣ ٣٤ ٢٩ ٣١ ٧٧

....

(٢٧)

كل عدد فى الفئة ا له علاقة طبقا لقاعدة ما بعدد فى الفئة ب .

اكمل الاعداد الناقصة فى المربعات الخالية امامك ؟



(٢٨) اكمل الاعداد الناقصة فى سلسلات الاعداد الاتية :

(ا) ٤ ، ٨ ، ١٢ ، ..... ، ٢٠ ، ٢٤ ، .... ، ٣٢

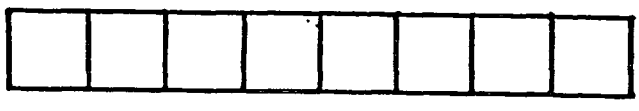
(ب) ١ ، ١٠ ، ١١ ، ٢٠ ، .... ، ٣٠ ، ٣١ ، ٤٠ ، ٤١

(٢٩)

رتب الكسور التالية مبتدئا بالاقل ثم الاكبر ثم الاكبر وهكذا .

ضع الكسور بعد ترتيبها فى الاماكن الخالية التالية .

٢/١ ٦/١ ٩/١ ٤/١ ٣/١ ٥/١ ٧/١ ٨/١



(٣٠)

انظر امامك جيدا سوف تجد فى كل عملية من العمليات الاتية • احد الاشارات (+ ، - ، / ، ×) ناقصة •

اكتب الاشارات الناقصة فى الصناديق الخالية التى امامك لكى تجعل العمليات صحيحة •

العملية الاولى عملت لك كنموذج يساعدك فى حل العمليات الاخرى •

٢ × ٨ = ٣٠	☐	٤
٤ + ٢ = ١٢	☐	٢
٤ + ٦ = ١٦	☐	٦
٦ + ٤ = ٢	☐	٥
٣٠ / ٥ = ٩	☐	٣

(٣١)

لاحظ العلاقات الموجوده امامك والتى سوف تساعدك على وضع الاعداد الناقصة فيما بعد •

ضع الاعداد الناقصة فى المكان الخالى ؟

٩ × ٩ = ٨١

٩ × ٩٩ = ٨٩١

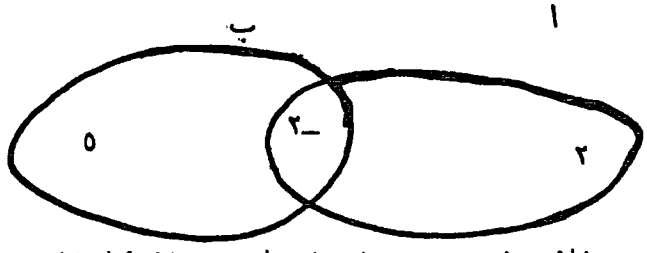
٩ × ٩٩٩ = ٨٩٩١

٩ × ٩٩٩٩ = ...

٩ × ٩٩٩٩٩ = ...

الفئة ا تحتوى على كل الاعداد التى تقبل القسمة على ٢ بدون باق .

الفئة ب تحتوى على كل الاعداد التى تقبل القسمة على ٥ بدون باق .



بعض الاعداد وضعت امامك فى الشكل السابق . ضع الاعداد ٤ ، ٦ ، ١٠ ، ٢٥ ، ١٨ فى اماكنهم المناسبة فى الشكل السابق ؟

(٣٣)

امامك اربع جمل ، واحده منهم ليست صحيحة . ضع خط تحت هذه الجملة الغير صحيحة والتى ليس لها معنى ؟

عدد اكبر من ٩ + ٤ واقل من ٩ × ٢ .

عدد اكبر من ٣ + ٣ واقل من ٢ × ٣ .

عدد اكبر من ٨ ـ ٤ واقل من ٨ + ٤ .

عدد اكبر من ٢٥ / ٥ واقل من ٣ + ٥ .

(٣٤)

١٠٥ ٤٢ ٢١

هناك تشابه فى الاعداد الثلاثة السابقة .

ضع خطا تحت الطرق التى تتشابه به الثلاث اعداد السابقة؟

الثلاث اعداد السابقة يمكن ان ينقسموا تماما على ٣ ، ٧ بدون باق .

الثلاث اعداد السابقة يمكن ان ينقسموا تماما على ١٣ بدون باق .

الثلاث اعداد السابقة فردية .

الثلاث اعداد السابقة يمكن ان ينقسموا تماما على ٨ ، ٩ بدون باق .

الثلاث اعداد السابقة يمكن ان ينقسموا تماما على ٢١ بدون باق .

---

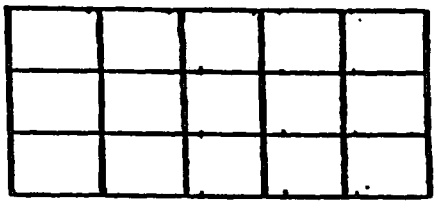
(٣٥) هناك علاقة ما بين الاعداد التى فى الصف العلوى والاعداد التى فى الصف الثانى بطريقة ما . اكمل الاعداد الناقصة فيما يلى :

١٠	١٨	٤	٢٢			٦٤	
٥	٩		١١	١٢	٤		٤٠

---

(٣٦)

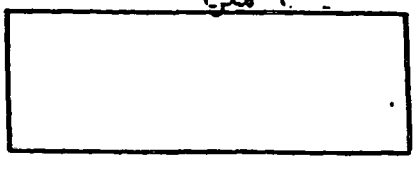
ظلل ثلث هذا المستطيل ؟



---

(٣٧)

اوجد طول الحبل الذى يلف حول قطعة ارض على شكل مستطيل بعداه ٦٠ مترا ، ٣٠ مترا ؟



.....مترا

(٣٨)

س = ٢٠

ص = كل الاعداد الصحيحة بين ١ ، ١٠٠

والان عليك ان توجد قيمة س × ص

ارسم حلقة حول العدد الوحيد والذى يحتمل ان يكون هو الوحيد الاجابة الصحيحة من الاعداد التالية ؟

٣٥ ١٠٠ ٤٣ ٥٤ ٣٠٩

---

(٣٩)

س يعنى كل الاعداد الصحيحة ٠

١- المطلوب منك ايجاد قيمة ١٥ + س

ارسم حلقات حول العددان الوحيدان اللذان لا يمكن ان يكونا الاجابة الصحيحة ؟

١٢ ١٤ ٩٩ ٥٣ ٨٢ ٩٤

٢- المطلوب منك ايجاد قيمة ٦٣ - ص ٠

ارسم حلقات حول العددان الوحيدان اللذان لا يمكن ان يكونا الاجابة الصحيحة ٠

٣٣ ٢٢ ١٧ ٥٥ ٧٧ ٨٢

(٤٠)

طارت طائرة ١٣ ساعة بسرعة قدرها ٣٨٥ كيلومترا في الساعة فقطعت مسافة ما .

في كم ساعة تقطع الطائرة هذه المسافة اذا طارت بسرعة ٤٥٥ كيلو مترا في الساعة ؟

.....

.....

.....

.....

(٤١)

احمد تاجر احذية عنده ١٠و٧٥٢ جنيها اشترى احذية سعر الواحد ٥ جنيهات ، وبقى معه ٢١٠ قرشا كم حذاء اشتراه ؟

.....

(٤٢)

سامي فاكهي اشترى ١٢٢٥ كيلو جراما من العنب بسعر الكيلو جرام ٦ قروش ، تلف منها ٢٥ كيلوجراما وباع الباقي فوجد انه كسب ٤٥٠ قرشا .

بكم باع الكيلو جرام الواحد ؟

.....

.....

.....

BASIC MATHEMATICAL SKILL TEST

Z.A.A.G. KHALID

SCHOOL'S NAME

CHILD'S NAME

DATE COMPLETED

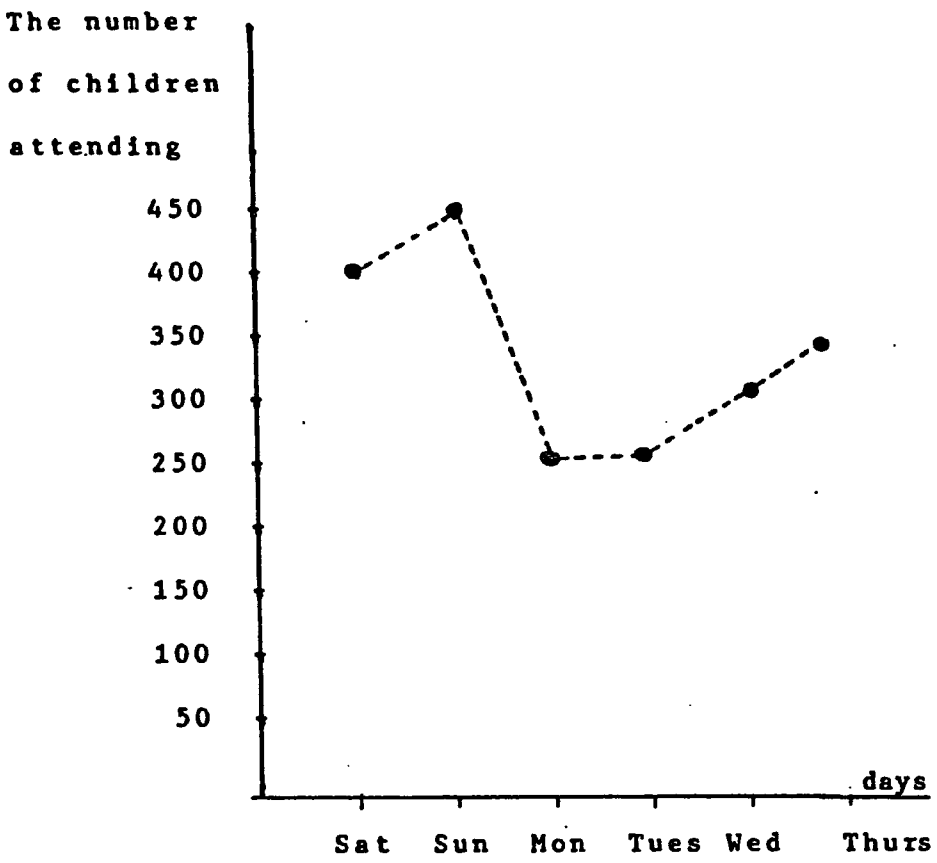
DATE of BIRTH

AGE

SEX

AGE 9 - 11

1) This graph shows children's attendance at school for each day in one week.



Which day had the highest attendance for the week?

_ _ _ _ _ _ _ _ _ _

Which day had the lowest attendance for the week?

_ _ _ _ _ _ _ _ _ _

How many children attended on Saturday?

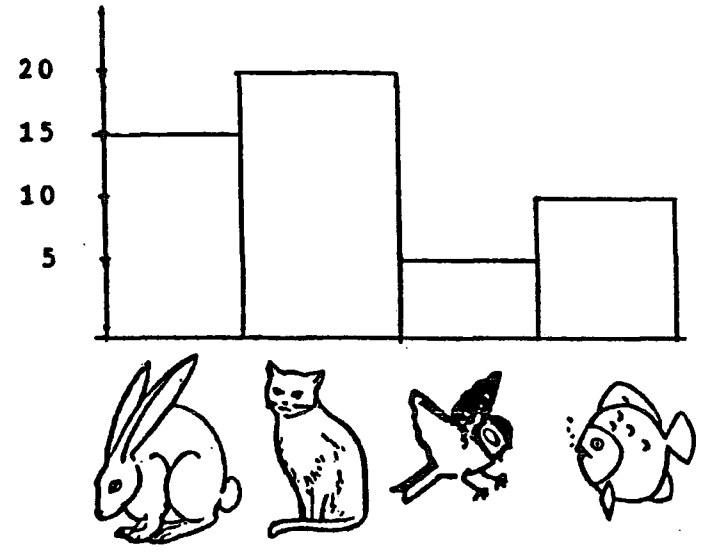
_ _ _ _ _ _ _ _ _ _

How many children attended on Monday?

_ _ _ _ _ _ _ _ _ _

page 2

2) This graph shows the number of children in a class who own a rabbit, a cat, a bird, or a fish. Every child owns one pet.



Which pet is most popular?

- - - - - - - - - - -

Do more children own cats than birds?

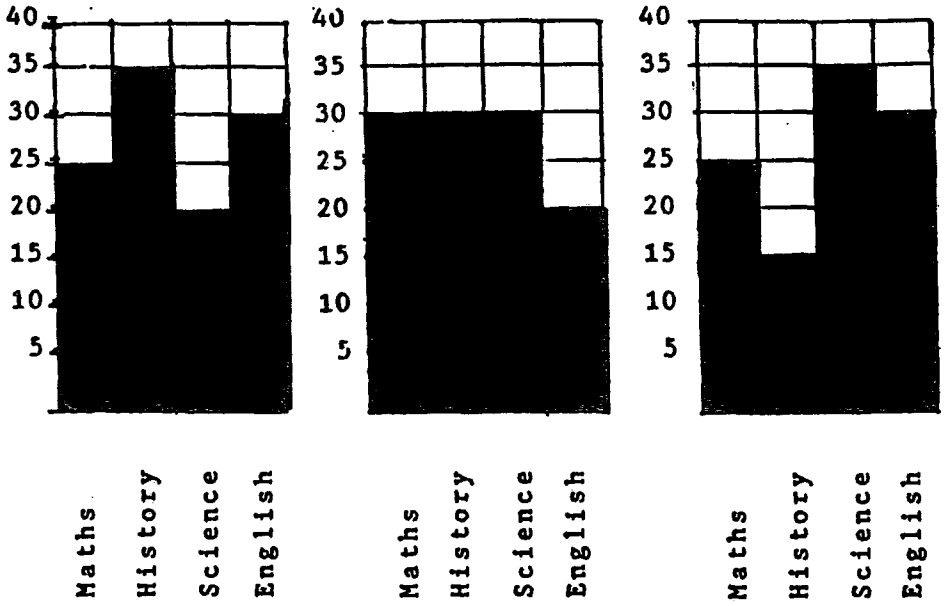
- - - - - - - - - - -

Which pet is owned by only 5 children?

- - - - - - - - - - -

---

3) These are graphs of children's scores, showing the average scores of children on each subject for three classes. Look at the graphs and then answer the questions.



In class III which subject had the highest average?

In class II which subject had the lowest average score?

Which class had the lowest average score for any subject?

In which two classes was there an average of 20 in at least one subject?

Which two classes had the same average scores in Maths?

_____ and _____

Which class had a lower average score in science than in any other subject?

_____

4 A map has a scale of 20 kilometres to 1 centimetre. What would be the actual distance between two places 3½ centimetres apart on the map?

_____

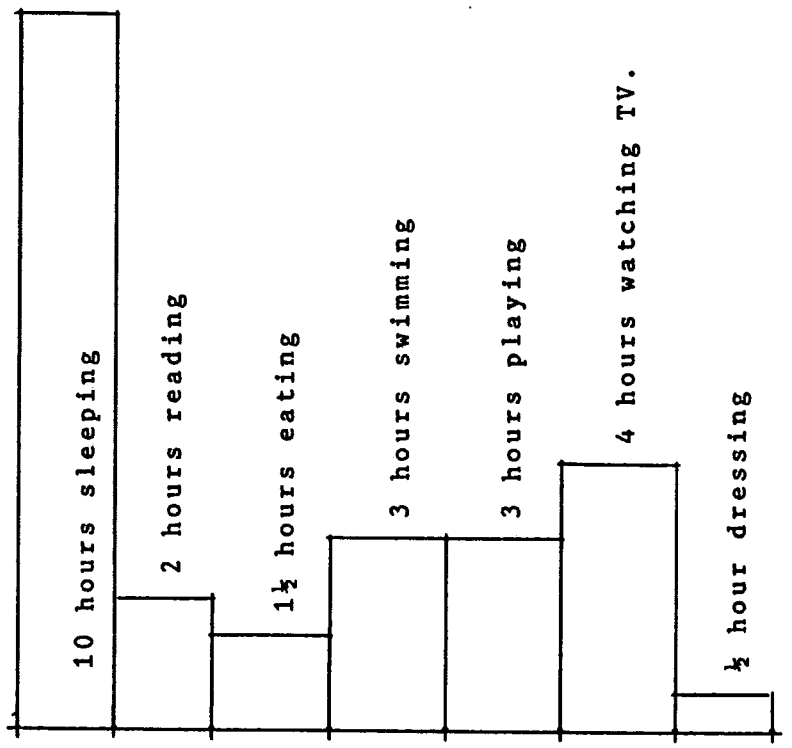
5 Hassan's height is 120 centimetres, and his father's is 180 centimetres. What fraction of his father's height is Hassan's?

_____

Hassan's father

Hassan

6) This table shows how Sami spent one day of his holiday.



What fraction of the 24 hours was spent altogether in sleeping and reading?

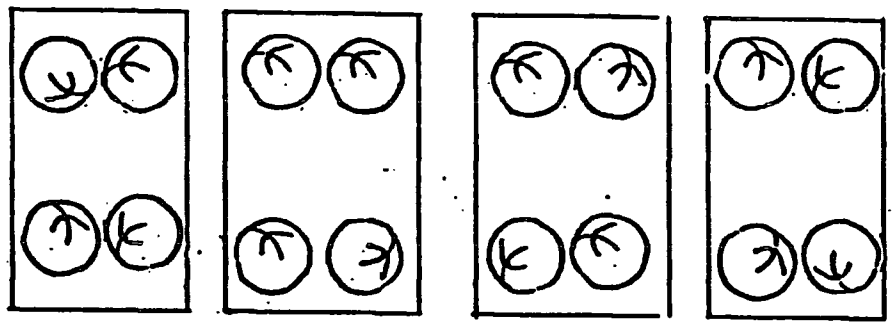
What fraction of the 24 hours was spent altogether in swimming and playing?

What fraction of the 24 hours was spent in watching T.V.?

What fraction of the 24 hours was spent altogether in dressing, eating and sleeping.

_ _ _ _ _ _ _ _ _

7) There are 4 oranges in each box. How many oranges are there altogether?
"Write the Answer on the dotted line."



_ _ _ _ _ _ _ _ _

8) Make up a division sum which gives the answer 3.

_ _ _ ÷ _ _ _ =3

9) Fill in the numbers missing from this addition sum.

$$\begin{array}{r} 21 \\ 13 \\ + \\ \hline 83 \end{array}$$

10)

Make up a subtraction sum which gives the answer 50.

____ - ____ = 50

11)

Make up a multiplication sum which gives the answer 50.

____ x ____ = 50

12)

Draw rings round the numbers that can be exactly divided by 2.

53 44 33 25 30 304 546

13)

Draw a ring round each of the <u>even</u> numbers.

30 42 3 5 7 89 18 87 32 13

14)

What kind of sum is this?

Draw a ring round your answer.

$$\begin{array}{r} 355 \\ \underline{11} \\ 344 \end{array}$$

Addition Subtraction Multiplication Division

page 8

15) What kind of sum is this?

Draw a ring round your answer.

$$\begin{array}{r} 49 \\ 5 \\ \hline 245 \end{array}$$

Addition Subtraction Multiplication Division

16)

22 + 33 = 55

What does 55 - 33 equal?

_____

17)

77 + A = 92

What number does A stand for?

_____

18)

270 ÷ 15 = 18

What is the answer to

270 ÷ 18

_____

19)

23 x 14 = 322

This information will help you to answer the next question. Fill in the number missing from each sum.

23 x 7 = _____
230 x 14 = _____
23 x 28 = _____

20)

Study the two examples given.

Examples:

(a) 2 x [3] = 6
8 x [3] = 24

(b) 2 x [6] = 12
8 x [6] = 48

Now write down the missing number

2 x [15] = 30
8 x [15] = ___

21)

44 x 37 = 1628

Using this information, do these questions:

440 x 37 = _____

4.4 x 37 = _____

page 10

22)

24 times 26 equals 624.

What does 624 divided by 24 equal?

24 x 26 = 624

624 ÷ 24 = _____

---

23)

There is a number missing from each of these sums. Write the missing numbers on the dotted lines.

9 + 10 = 8 + _ _ _

12 x _ _ _ = 168

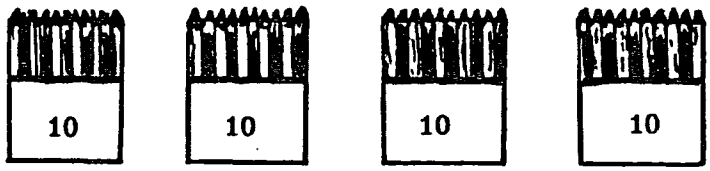
8 x _ _ _ = 24

32 - 17 = 8 + _ _ _

$$\begin{array}{r} 6\,\_\,\_\,3 \\ +\ \_\,\_\,8\,\_\,\_ \\ \hline 9\ 2\ 4 \end{array} \qquad \begin{array}{r} 3\,\_\,\_\,4 \\ +\ 1\ 7\ 2 \\ \hline \_\,\_\,2\ 6 \end{array}$$

24)

Here are four boxes of pencils. There are ten pencils in each box. If 31 children were each given a pencil, how many pencils would be left?



pencils

31 pencils _____ pencils

25)

This table gives the dates of birth of five children.

	day	month	year
Ahmed	13th	March	1957
Hassan	22nd	January	1952
Sami	15th	June	1952
Rami	16th	August	1957
Saad	26th	February	1955

Who is the eldest? _____

Who is the youngest? _____

26)

Write these numbers in order, starting with the smallest.

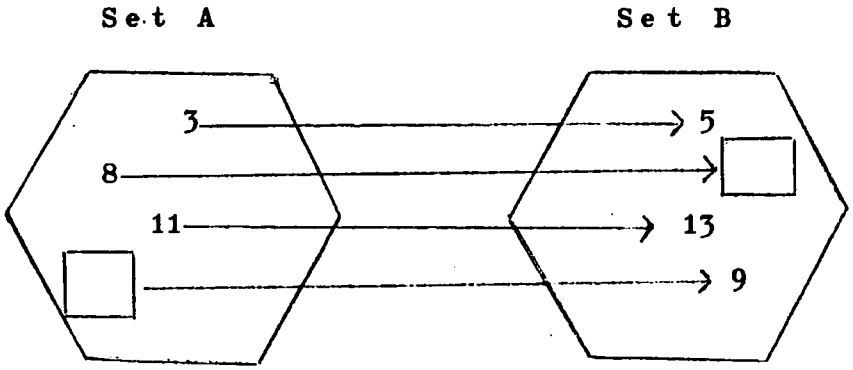
92 13 43 34 29 31 77

__ __ __ __ __ __ __

27)

Each number in set A is related by the same rule to a number in set B.

Fill in the missing numbers.



28)

Fill in the missing numbers in these series:-

(a)

4, 8, 12, ___, 20, 24, ___, 32

(b)

1, 10, 11, 20, ___, 30, 31, 40, 41

29)

Put the following fractions in the boxes in order of size, starting with the smallest.

$\frac{1}{2}$ $\frac{1}{6}$ $\frac{1}{9}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{7}$ $\frac{1}{8}$

30)

In each of these sums one of the signs + − ÷ x is missing. Write the missing signs in the boxes. The first one has been done for you.

2 x 8 = 20 [−] 4

4 + 2 = 12 [ ] 2

4 + 6 = 16 [ ] 6

6 + 4 = 2 [ ] 5

30 ÷ 5 = 9 [ ] 3

31)

Fill in the missing number -

9 x 9 = 81

9 x 99 = 891

9 x 999 = 8991

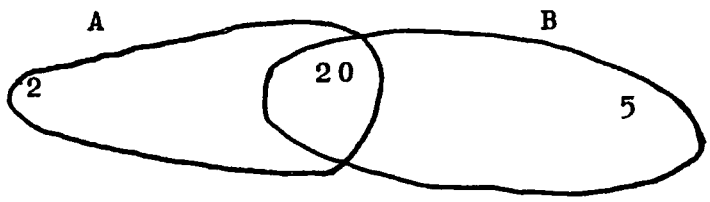
9 x 9999 = _____

9 x 99999 = _____

32)

Set A contains all numbers that can be divided by 2.

Set B contains all numbers that can be divided by 5.



Some numbers have been put in already.

Put the numbers 4, 6, 10, 25 and 18 into their proper places in the diagram.

33)

Here are four statements. One does not make sense. Underline it.

A number is more than 9 + 4 and less than 9 x 2

A number is more than 3 + 3 and less than 2 x 3

A number is more than 8 - 4 and less than 8 + 4

A number is more than 25 + 5 and less than 3 + 5

34)

21 42 105

The three numbers above are alike in some ways.

Underline the ways in which they are alike.

They can all be divided exactly by 3 and 7

They can all be divided exactly by 13

They are all odd numbers

They can all be divided exactly by 8 and 9

They can all be divided exactly by 21

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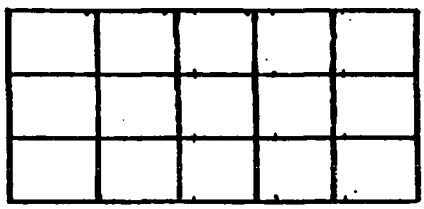
35)

The numbers in the top row go with the numbers in the bottom row in a certain way. Fill in the missing numbers.

10	18	4	22			64	
5	9		11	12	4	32	40

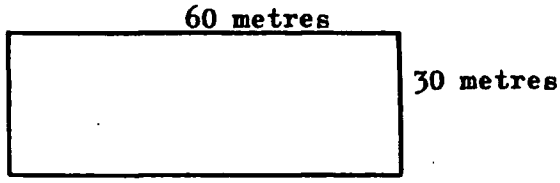
36)

Shade in $\frac{1}{3}$ of this rectangle.



37)

How many metres would be needed to go right round this rectangle?



_____ metres

38)

M = 20

Y = a whole number between 1 and 100.

I want to find the value of M x Y.

Draw a ring round the <u>one</u> number below which is the only possible correct answer.

35 100 43 54 309

---

39)

The letter L stands for any whole number greater than 1.

I want to find the value of 15 + L.

Draw rings round the <u>two</u> numbers below that cannot possibly be correct answers.

12 14 99 53 82 94

Now I want to find the value of 63 - L.

Draw rings round the <u>two</u> numbers below that cannot possibly be correct answers.

33 22 17 55 77 82

40)

An aeroplane flys 13 hours at a speed of 385 kilometres per hour. How many hours would the aeroplane take if it flew at a speed of 455 kilometres per hour?

____ hours

---

41)

Peter works in a shoe shop. He had £752-10 to buy shoes for the shop. He bought shoes costing 5 pounds per pair and has 210 pence left. How many pairs of shoes has he bought?

------

42)

Mick bought 1225 pounds of grapes at 6 pence per pound. 25 pounds were bad, but he sold the rest. He found that his profit was 450 pence. How much per pound did he sell them?

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