11+ MATHEMATICS PRACTICE PAPER

We have provided you with a sample 11+ entrance examination paper to practise on. The answers can be found on page 27.

Time allowed

- 50 minutes

Instructions

- Please read the instructions carefully
- Answer as many of the questions as you can during the time in the spaces provided
- If you need more paper, please ensure you clearly label each question number and write your name on each page
- Show all the steps of your working for full marks
- Cross through any work you do not want to be marked

CALCULATORS ARE NOT PERMITTED

Information

- The marks for questions are shown in brackets
- The maximum mark for this paper is 80 marks

Please don't worry if you are unable to complete a question. You can leave a question and go on to the next, and then come back to it once you have completed the other questions on the paper.

Q1 Add together the numbers 1904 and 739

_____ (2)

Q2 Subtract 284 from 867

_____ (2)

Q3 Multiply 342 by 7

_____ (2)

Q4 Divide 2094 by 6

_____ (2)

Q5 Fill in the digits to make the following calculation correct

$$
\begin{array}{r}
7\ \boxed{}\ 7 \\
-\ 2\ 8\ \boxed{} \\
\hline
\boxed{}\ 9\ 2 \\
\hline
\end{array}
$$

(2)

Q6 In a class, the teacher has eleven books, nine girls each have five books and seven boys each have six books. How many books are there in total?

_____ (2)

Q7 A prize of £200 is won by a group of 17 people.

It is shared equally between them, with each person getting a whole number of pounds and the rest is given to charity.

How much does each person receive?

How much goes to charity?

_____(2)

Q8 Multiply 146 by 19

_____(2)

Q9 Divide 7294 by 14

_____(2)

Q10 Work out $7^2 - 20 \times 0.5 + 11$

_____(2)

Q11 (a) Work out 81×16

_____(3)

_____(1)

(b) From part (a) and without calculating, write down the answer to 810×160

_____(1)

(c) From part (a) and without calculating, write down the answer to 8.1×1.6

_____(1)

Q12 (a) Work out 315÷9

_____ (1)

(b) From part (a) and without calculating, write down the answer to 3150÷9

_____ (1)

(c) From part (a) and without calculating, write down the answer to 315÷0.9

_____ (1)

Q13 Arrange the following numbers in order of size from smallest to largest:

70.1%   71/100   0.717   28/40   0.711

_____ (3)

Q14 Complete the table below (the first row has been done for you)

Fraction	Decimal
$\frac{3}{10}$	0.3
$\frac{3}{5}$	
$\frac{5}{8}$	
	0.35

(3)

Q15 (a) Write down all the multiples of 13 which are smaller than 100

_____(2)

(b) Write down all the factors of 24

_____(2)

(c) A prime number has exactly two different factors.

Which of the following numbers are prime? Explain why.

131

187

513

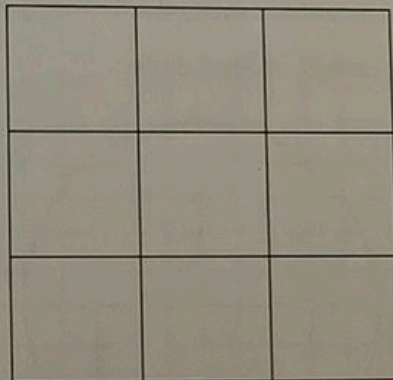_____(3)

Q16 The sequence of numbers below uses the rule: "subtract 5 and then multiply by 2" working from left to right.

Fill in the missing numbers using the rule. Use the space below for working.

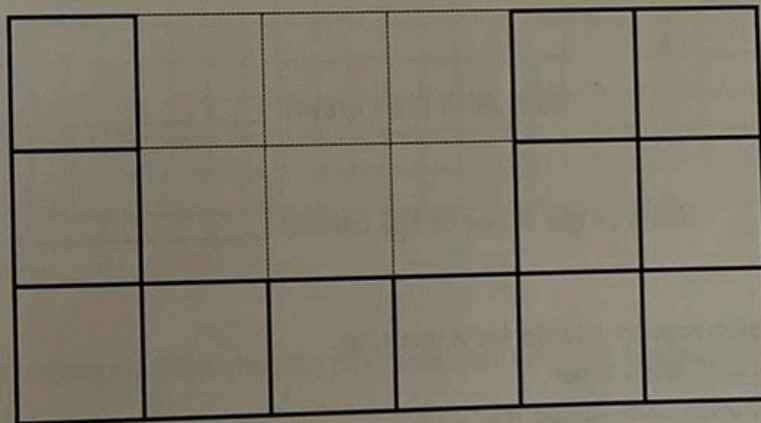|	8	6			-22	

(4)

Q17 Shade four squares in the grid below so that it will have no lines of symmetry.

(2)

Q18 (a) What is the area and the perimeter of the shape below?
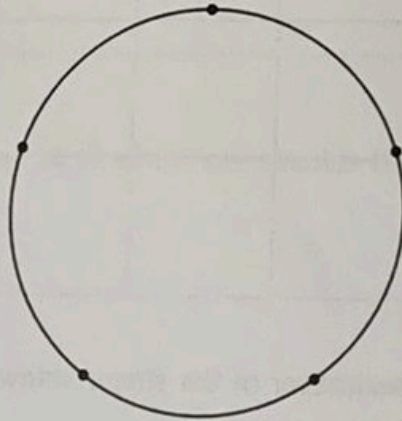

Area = _____ (1)

Perimeter = _____ (1)

(b) Can you draw a shape which has an area equal to its perimeter?

Draw it below.

(1)

Q19 (a) Using a ruler, draw a line to connect every dot to every other dot.

As you do this, keep count of the number of lines drawn.

Number of lines drawn: _____ (1)

Name of the shape at the centre: _____ (1)

(b) Five people sit down around a table for a meeting.
They all shake hands with each other.
How many different handshakes happened?

_____ (1)

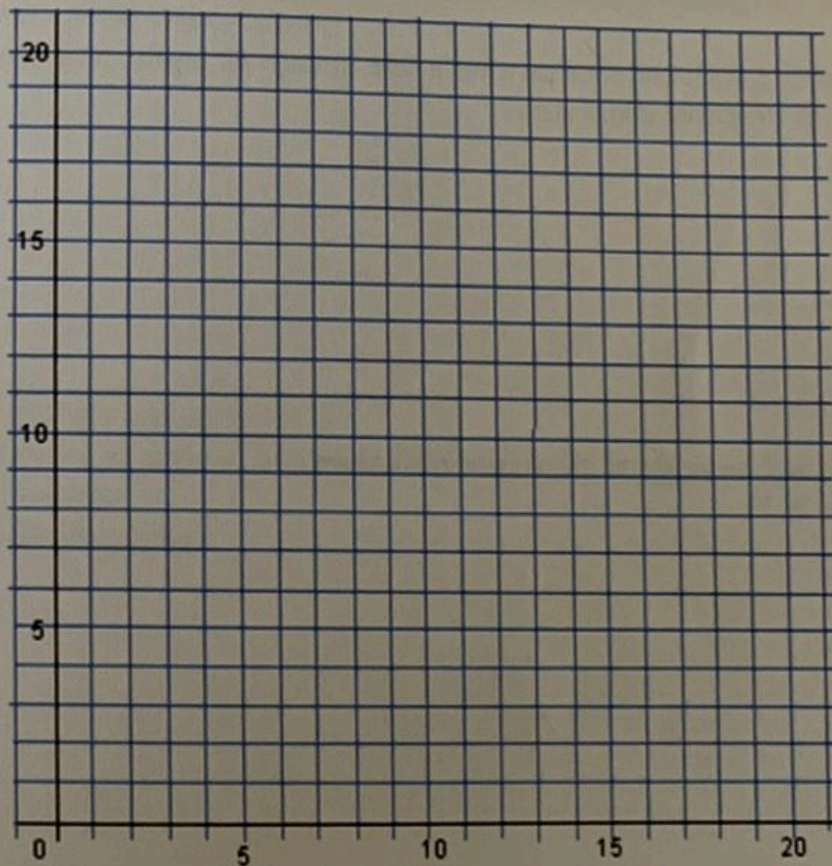(c) How many total handshakes would there be for a meeting of six people?

_____ (1)

Set 1 – makes a square
(2, 11), (0, 9), (2, 7), (?, ?)

Set 2 – makes a square
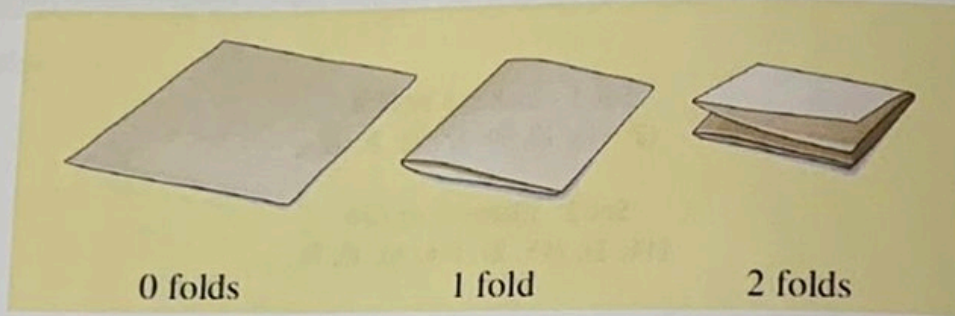(11, 3), (15, 2), (16, 6), (?, ?)

Write down the coordinates of the missing points so that each set makes a square:

Set 1: (,) Set 2: (,)

(4)

Q21 A square piece of paper is folded in half repeatedly as shown below.

0 folds   1 fold   2 folds

If John makes exactly 5 folds and then punches a hole through all layers, how many holes will he see when he unfolds the paper completely?

_____ (2)

Q22 Nikki's brother will be as old as she is now in six years.
Their total age now is 34.
How old is Nikki?

_____ (3)

Q23 Sebastian's watch runs slow and loses two minutes per hour.
Jim's watch runs fast and gains one minute per hour.
They both set their watches correctly at 6am then start their journey to the airport.
What is the time difference in their watches at 9am?

_____ (1)

When they arrive at the airport their watches are 10 minutes apart.
What exact time do they arrive at the airport?

_____(2)

Q24 Susan has a big bucket which has no holes in it.
It weighs 25 kg when full of water but after a third of the water is poured out it weighs 18 kg.
What is the weight of the empty bucket?

_____(3)

Q25 Angles in a triangle add up to 180°.
Angle B is twice as big as angle A, and angle C is three times as big as angle A.
Find each of the angles.
Sketching a triangle may help.

A=_____° B=_____° C=_____° (3)

Q26 Louise has 5 cubes of different sizes.
When arranged in order of size each cube is 1cm taller than the previous.
When she stacks the smallest two cubes the total height is equal to the height of the largest cube.
What would be the total height if all cubes were stacked up together?

_____(3)

Q27 Rosie loves inventing new ways to combine numbers.

She calls her recent invention squadification, for which the symbol is

To squadify two numbers a and b she says to use the following rule: $\odot$

$$a \odot b = a^2 + b^2 + ab$$

Which means square each number, multiply the numbers and add the results together.

For example

$$2 \odot 3 = 2^2 + 3^2 + 2 \times 3 = 4 + 9 + 6 = 19$$

Work out the following

$1 \odot 4 =$ _____

$5 \odot 5 =$ _____

$8 \odot 11 =$ _____

Find the value of $\odot$ if the following is true:

$2 \odot x = 67$

_____(6)

END OF EXAM PAPER