SOLIHULL JUNIOR SCHOOL

10+ ENTRANCE EXAMINATION

MATHEMATICS

SAMPLE PAPER 1

SOLIHULL

SOLIHULL SCHOOL 10+ SAMPLE PAPER

MATHEMATICS

Time: 50 Minutes

Attempt as many questions as you can. Write your answers on this paper in the spaces provided. Read the questions carefully and show your working where necessary. Use any method you like when working out each question.

1. Write the following number in figures:

   one hundred and three thousand, four hundred and nine

   Answer: _____

2. Round the following numbers

	to the nearest 10	*to the nearest 100*
47 →		
165 →		
1,216 →		
14,575 →		

3. Work out the following:

   i) 23,576 + 1000 = ☐

ii) 2,986 + 100 = ☐

4. Here is the first part of a pattern of numbers

1 5 9 13 17

i. From the numbers written above, write down

a. a prime number

Answer: _____

b. a square number

Answer: _____

ii. a. Write in words the rule to get the next number in the pattern.

Answer: _____

b. Write down the next four numbers in the pattern.

Answer: _____ , _____ , _____ , _____

iii. a. Which of your numbers in *ii b* above are multiples of three?

Answer: _____

b. What do you notice about the position of the multiples of three in this pattern of numbers?

Answer: _____

5. Work out the following:

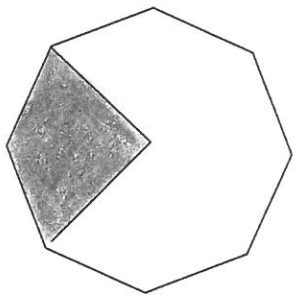
i. a. $\begin{array}{r} 476 \\ +778 \\ \hline _____ \end{array}$ b. $\begin{array}{r} 789 \\ -296 \\ \hline _____ \end{array}$

ii) a. $\begin{array}{r} 236 \\ \times 32 \\ \hline _____ \end{array}$ b. $1435 \div 8$

6. Look carefully at the following fractions. Circle the fraction that is **not** equivalent to the others

$$\frac{4}{6} \qquad \frac{10}{15} \qquad \frac{8}{12} \qquad \frac{6}{10} \qquad \frac{12}{18}$$

7. a. i. What fraction of this regular octagon has been shaded?



Answer:_____

ii. Shade in half of the remaining part.

iii. What fraction is now shaded altogether?

Answer: _____

b. This table shows equivalent fractions, decimals and percentages. Complete the table.

Fraction	Decimal	Percentage
$\frac{1}{2}$		
	0.3	30%
		20%
7/100		

8. Five members of a family measured their height. They recorded their measurements in this table.

Name	Height
Jane	*1.5 m*
Bob	*1.9 m*
Tracy	*85 cm*
Fiona	*1.2 m*
David	*1.14 m*

i. Who is the tallest member of this family?

Answer: _____

ii. Write Fiona's height in centimetres.

Answer: _____ cm

iii. Find the range of heights.

Answer: _____ metres

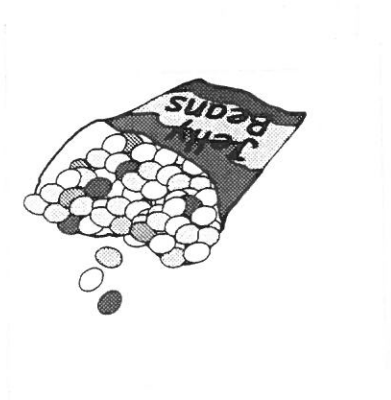
iv. How much taller is Fiona than David?

Answer: _____ cm

v. Write the heights of the family in order, starting with the smallest.

_____, _____, _____, _____, _____,

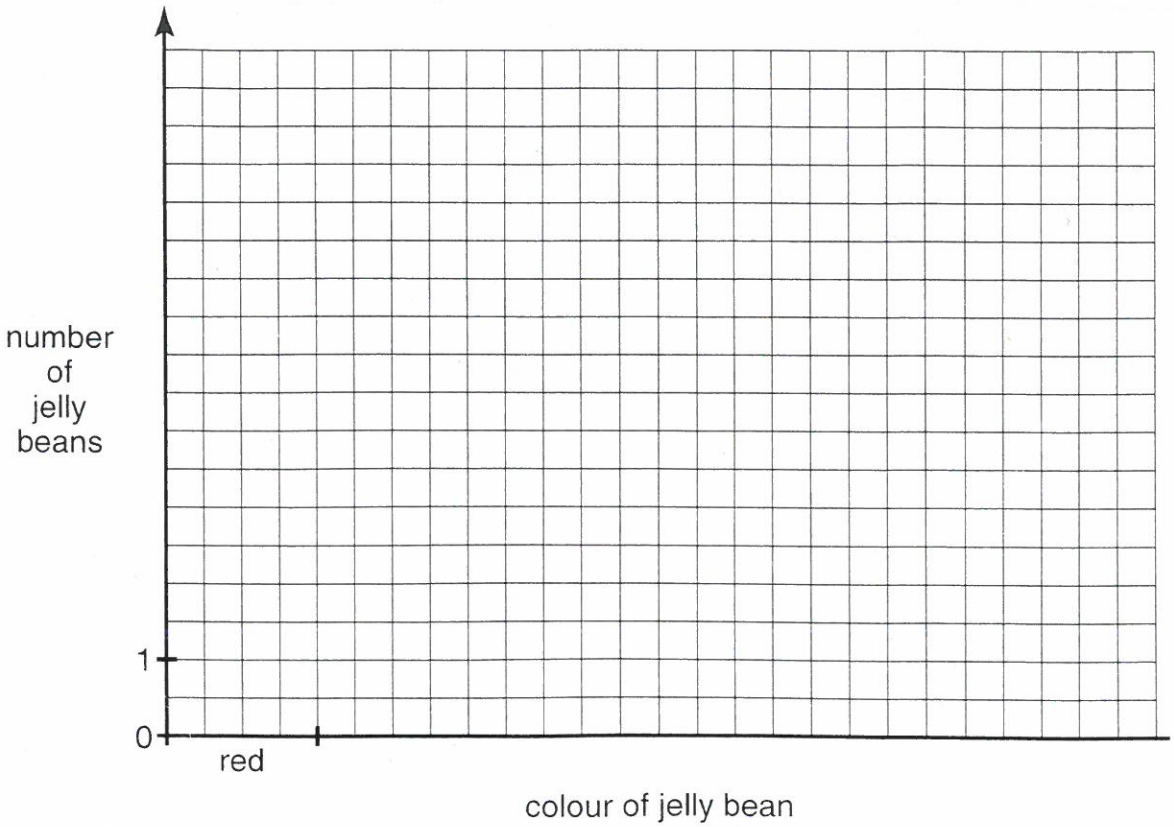
9. Jane counts the number of jelly beans of each colour in a bag.



i. Complete the frequency column in the table below.

Colour	Tally	Frequency
red	|||	
orange	𝍸 |	
green	𝍸	
brown	𝍸 ||||	
pink	𝍸 ||	
	total	30

ii. Complete the bar chart below to show this information.



iii. Jane separates her jelly beans into piles of the same colour.
What is the mean number of jelly beans in each pile?



Answer: _____

10. a. In her purse, Agatha has five coins with a total of **93 pence**.

She take the following three coins:



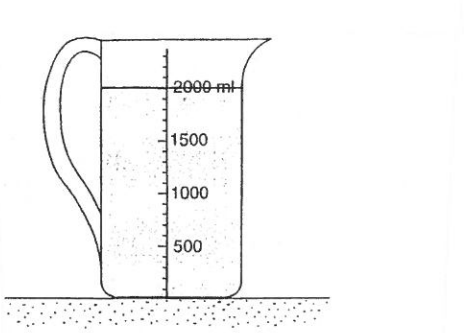




What are the other two coins?

Answer: _____ and _____

b. Miss Tickit has a large measuring jug in which there is some water.



i. How many litres of water are in the jug?

Answer: _____ litres

ii. Miss Tickit fills seven 200 millilitre glasses with water from the jug. How many millilitres of water remain in the jug?

Answer: _____ ml

iii. How many more glasses could Miss Tickit fill from the jug?

Answer: _____

11. Penny has eight numbered discs.

12	50	27	6	9	17	22	35

You may use a number more than once

From these numbers choose

i. a square number

Answer: _____

ii a multiple of 7

Answer: _____

iii. a factor of 100

Answer: _____

iv. a prime number

Answer: _____

v. a cube number

Answer: _____

vi. two numbers with a difference of 18

Answer: _____ and _____

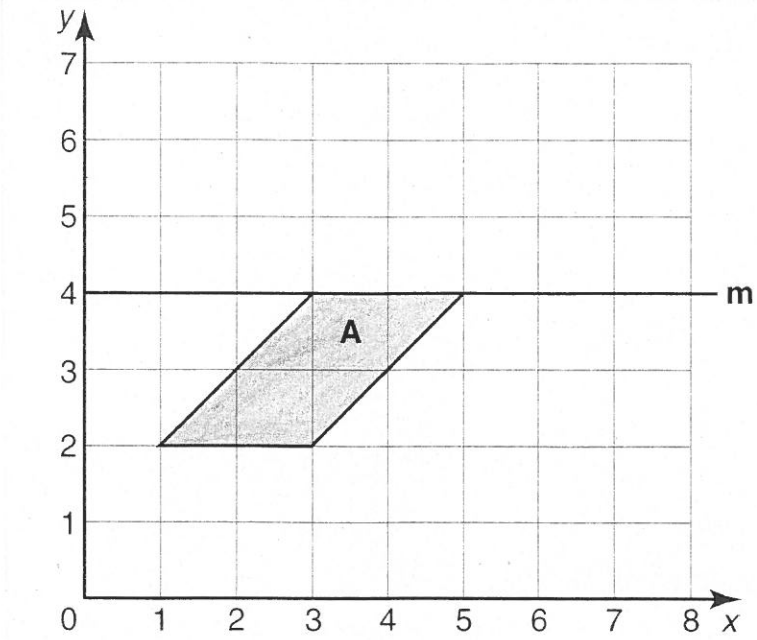
vii. two numbers with a sum of 31

Answer: _____

viii. two numbers with a product of 72

Answer: _____

12. a. Shape **A** is drawn on a centimetre-square co-ordinate grid.



i. Which type of quadrilateral is shape **A**?

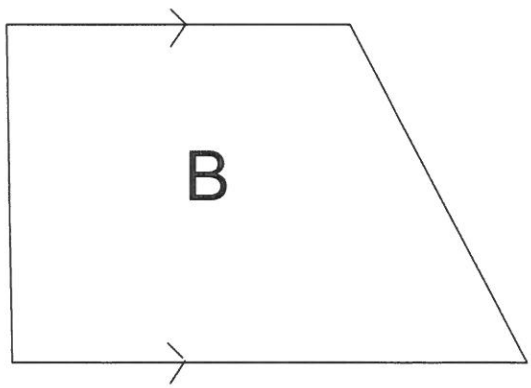
Answer: _____

ii. What is the area of shape **A**?

Answer: _____ cm^2

iii. Reflect shape **A** in the mirror line m.

b.



i. Which type of quadrilateral is shape **B**?

Answer: _____

ii. On shape **B**, mark with a cross, **X**, an angle greater than 90°.

13. Use the following number fact

15 x 24 = 360

To help you fill in the gaps below.

i. 150 x 24 =

ii. 15 x 12 =

iii. _____ x 24 = 720

14. Find out which of the following is larger and by how much.

16 x 7 or 17 x 6

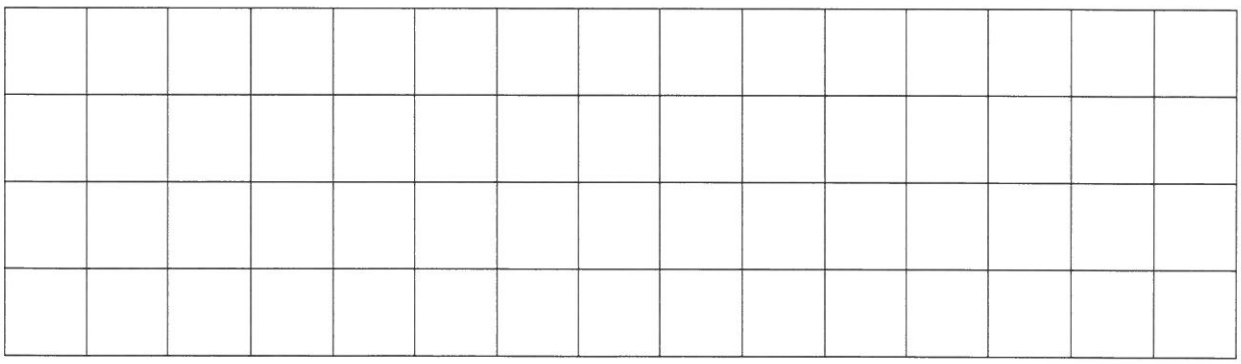
Answer: _____ is larger by _____

15. Laura is investigating shapes with area 12 cm^2.

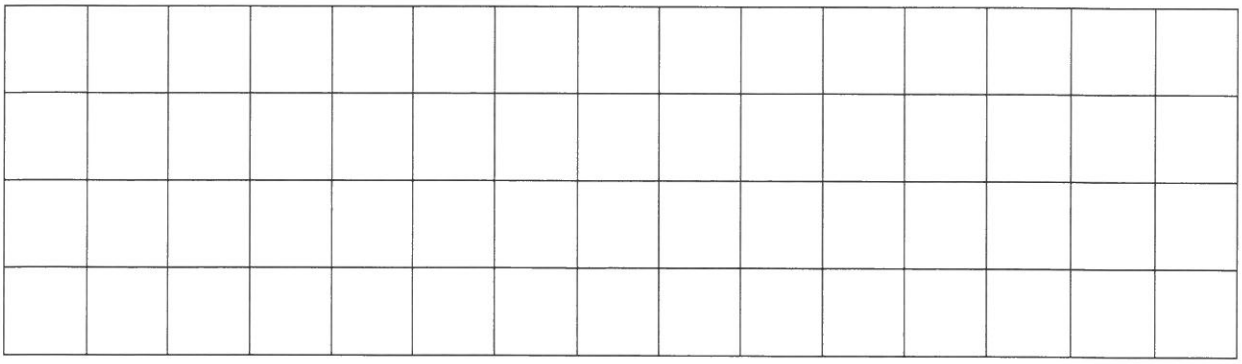
She has not yet investigated rectangles. The lengths of the sides must be whole numbers.

On each grid below, draw a **different** rectangle with an area of 12 cm^2.

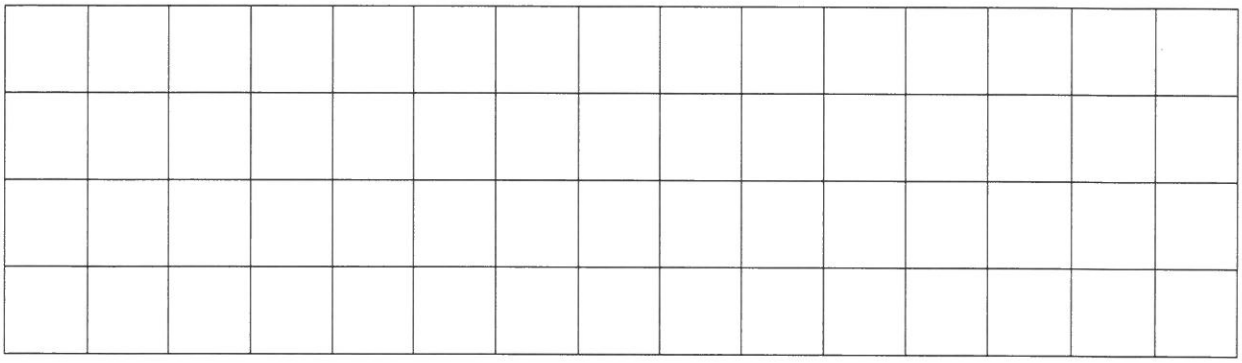
Write its perimeter on the line underneath the grid.



Perimeter: _____ cm

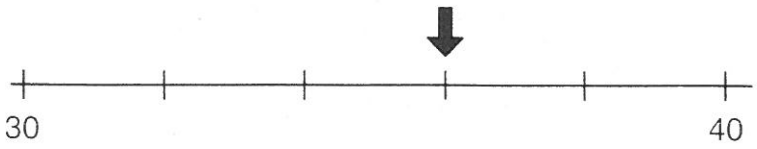


Perimeter: _____ cm



Perimeter: _____ cm

16. Write the numbers indicated by the arrows on these scales.



Answer: _____

17. Bob has 3 times as many sweets as Cath.

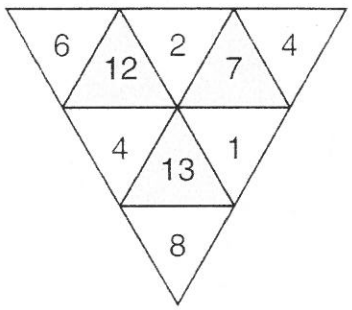
Cath has 9 fewer than Al.

If Al has 26, how many does Bob have?

Answer: _____

18 In the following puzzles, the number inside the shaded triangle is equal to the total of the numbers inside the triangles which touch its edges.

For example:



Fill in the missing numbers in the triangles below.

