

Key Stage 2

Mathematics

Paper 3: Reasoning

First Name						
Middle Name						
Last Name						
Date of Birth	Day		Month		Year	
School Name						

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Instructions

You **must not** use a calculator to answer any questions in this test.

Questions and answers

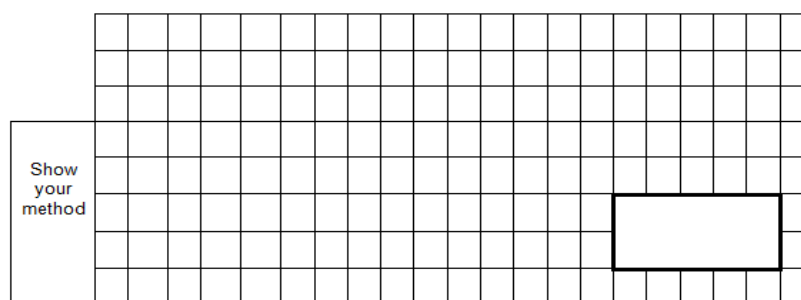
You have **40 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Some questions have a method box like this:



The diagram illustrates a method box layout on a grid. It features a large grid of 10 columns and 10 rows. A vertical box on the left side of the grid, labeled "Show your method", covers the first three rows. A smaller rectangular box on the right side of the grid covers the last three rows, from the 7th to the 10th column.

For these questions you may get a mark for showing your method.

If you cannot do a question, **go on to the next one.**

You can come back to it later, if you have time.

If you finish before the end, **go back and check your work.**

Marks

The number under each line at the side of the pages tells you the number of marks available for each question.

1. The numbers in this sequence increase by the same amount each time.

Write the missing numbers.

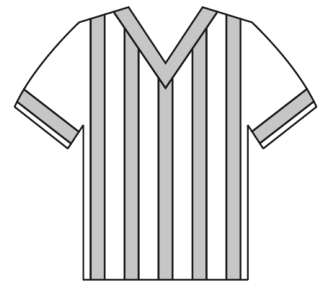
_____ **45** _____ **63** **72** _____

2 marks

2. Kerrie chooses the colours for a new team shirt.

The shirt has **two** colours.

There are four colours to choose from **green, red, blue** and **black**.



Write the **two** missing combinations.

The shirt could be:

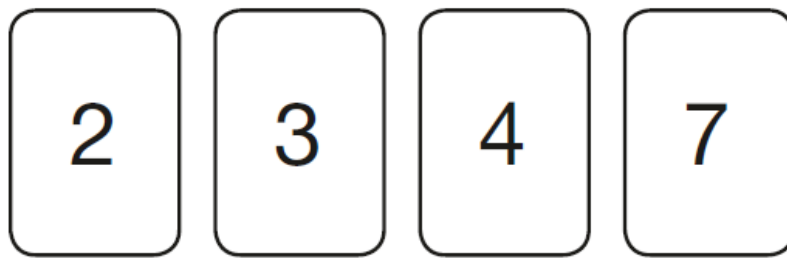
- green and red
- green and blue
- red and blue
- red and black

_____ and _____

_____ and _____

1 mark

3. Here are four number cards.



Sayed uses each card once to make a four digit number.

He places:

- 7 in the hundreds column
- 4 so that it has the lowest value than any of the other digits
- The remaining two digits so that 2 has the lower value.

Write a digit in each box to show Sayed's number.

Four empty rounded rectangular boxes are arranged horizontally, intended for the student to write the digits of the number.

1 mark

4.

Write the three missing digits to make this **addition** correct.

$$\begin{array}{r} \quad 7 \quad 6 \quad 3 \quad 3 \quad \boxed{} \\ + \quad \quad 4 \quad 5 \quad \boxed{} \quad 8 \\ \hline \boxed{} \quad 0 \quad 8 \quad 8 \quad 5 \end{array}$$

 2 marks

5.

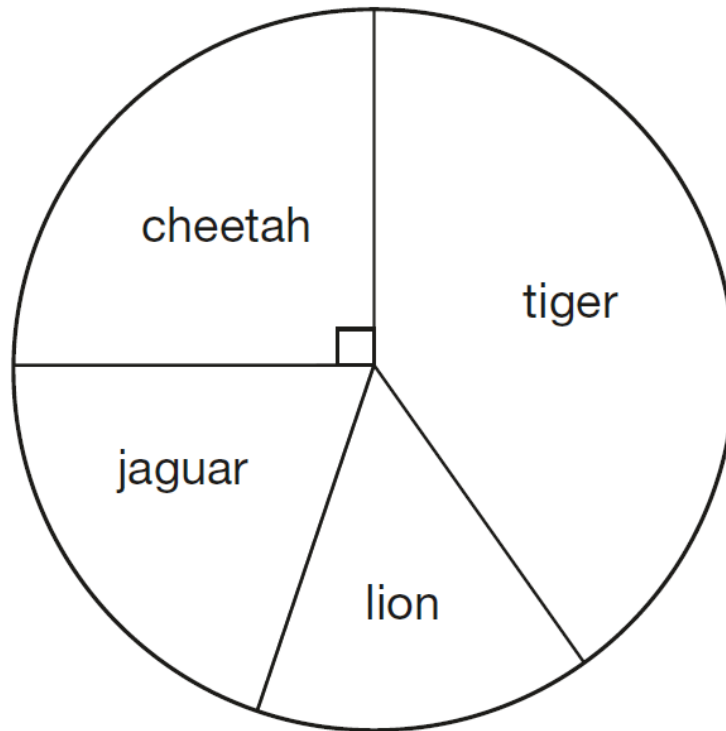
Circle the numbers that are common factors of both **24** and **32**

2 3 4 6 8 12

 2 marks

6. This chart shows the number of different types of big cat in a zoo.

There are **60** big cats in the zoo altogether.



Here are some statements about the chart.

Tick the statements that are **true**.

There are fewer jaguars than cheetahs.

The total number of lions and tigers is 30.

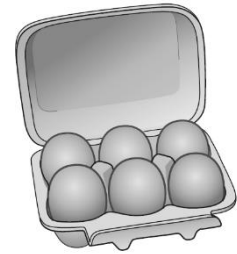
There are 15 cheetahs.

There are 20 lions.

2 marks

7. A farmer is packing eggs.

Each box holds **six** eggs.



The farmer has 890 eggs to pack.

How many boxes can the farmer fill using 890 eggs?

1 mark

How many eggs will be left over?

1 mark

8. Tom has £600

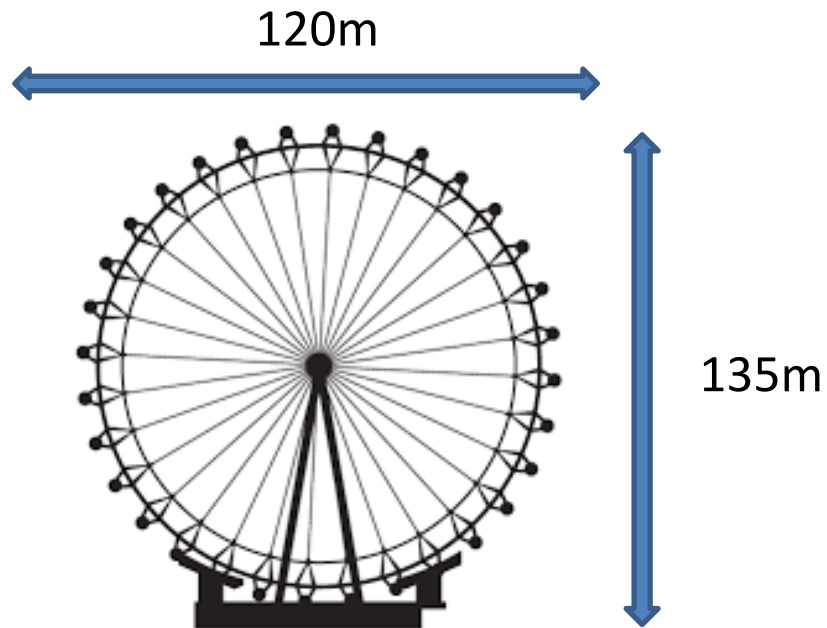
He spends **65%** of his money on a new bike.

How much does Tom spend on his new bike?



1 mark

9. The London Eye is 135m tall and 120m wide.



Kerrie makes a scale model of the London Eye.

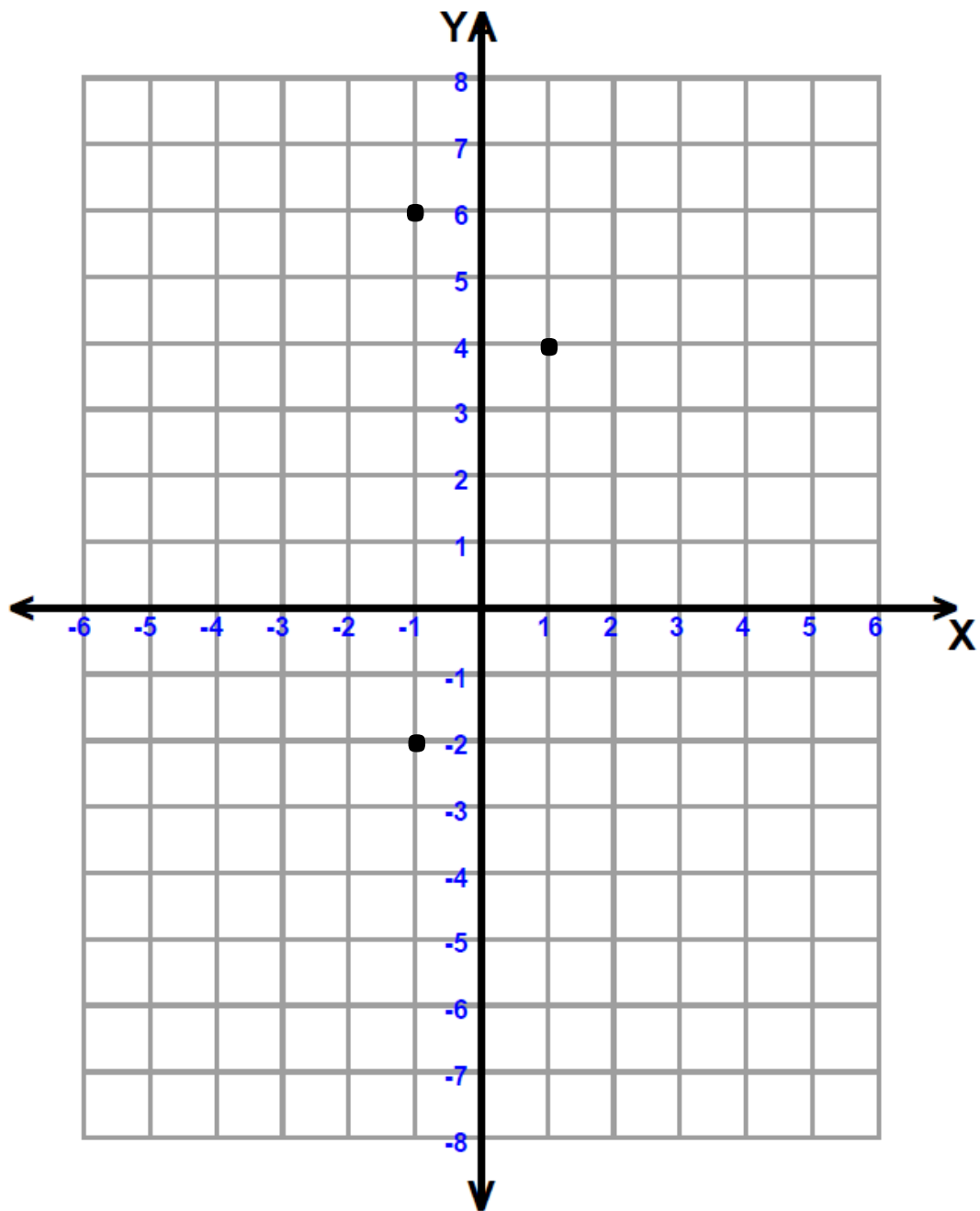
Her model is 40 centimetres wide.

How **tall** is her model?

cm

1 mark

10. Sayed draws a **kite** on this coordinate grid. Three of the vertices are marked.

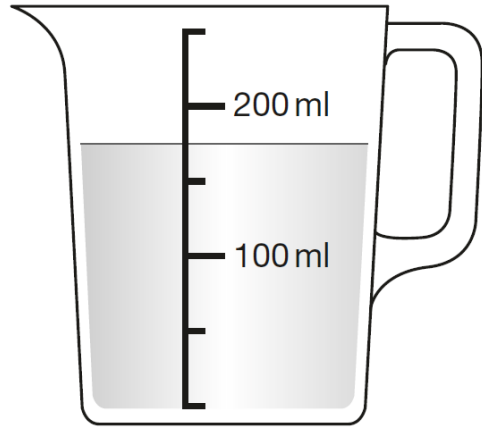
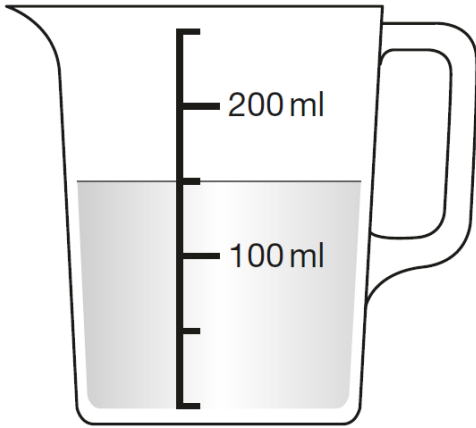


What are the coordinates of the missing vertex?

(,)

1 mark

11. Tom has 800 millilitres of water in a bottle.
He pours some of the water into two measuring jugs as shown.



How many millilitres are left in Tom's bottle?

Show your method

ml

2 marks

12. This table shows the areas of Gambia and Vietnam.

Country	Area (square kilometres)
Vietnam	310,000
Gambia	10,000

The area of Vietnam is larger than the area of Gambia.

How many times larger is Vietnam?

times larger

1 mark

13. A box contains 2.2kg of washing powder.
Sayed uses 55 grams of powder for each wash.
He uses all the powder.

How many washes did Sayed do?

Show your method

2 marks

14. Two of the angles in a triangle are 60° and 60°

Tom says,

The triangle could be scalene.



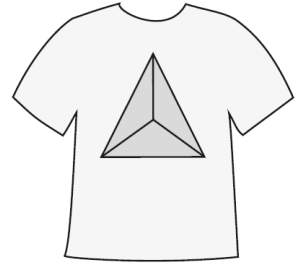
Explain why Tom is **not** correct.

A large, empty, cloud-shaped box with a scalloped border, intended for the student to write their explanation.

 1 mark

15. A shop prints designs on T-shirts.

They use the formula to work out the price for printing a design.



Price = 70p x number of colours + £1.45

What is the price for printing a design that has **4** colours in it?

£

 1 mark

Kerrie has £7 to spend on printing a design.

What is the greatest number of **colours** she can have in the design?

Show your method

colours

 2 marks

16. A book has 249 pages.

Sayed has read $\frac{1}{3}$ of the book.

How many pages are **left** for Sayed to read?

Show your method

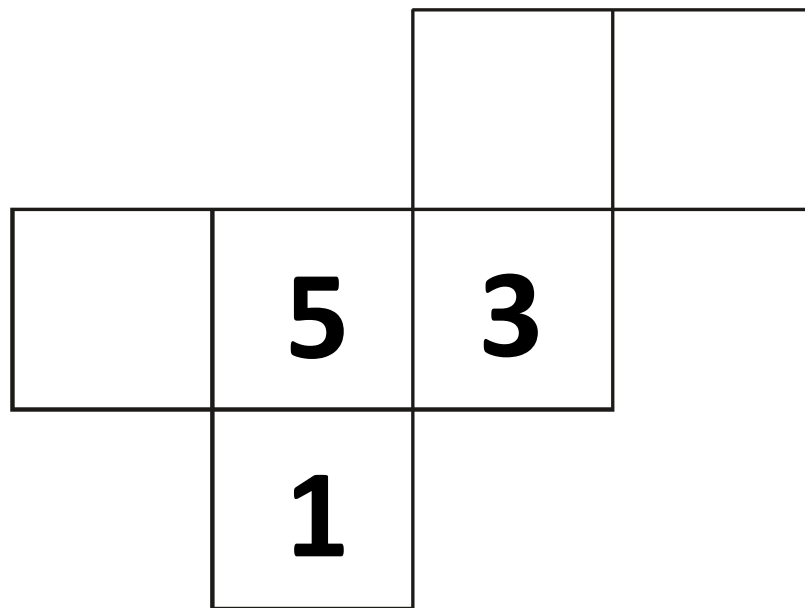
pages

2 marks

17. On a dice the sum of the numbers on opposite faces is always 7.



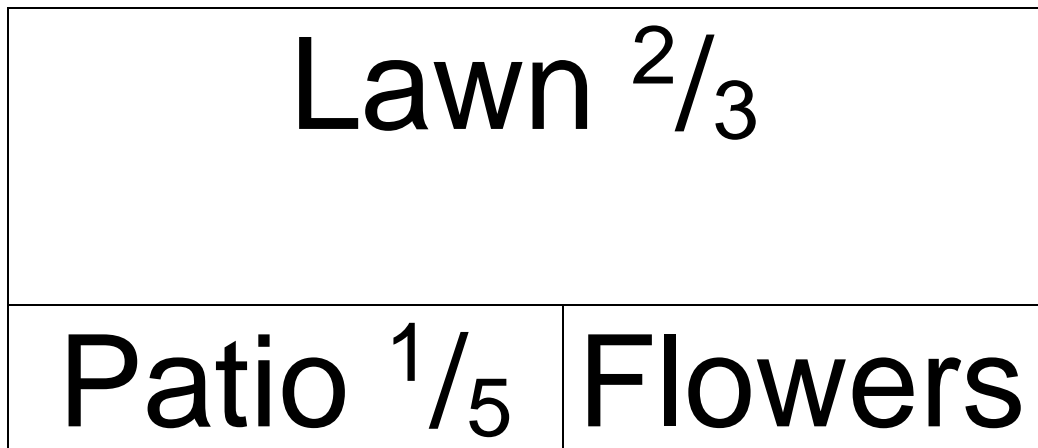
Put the numbers on the three empty faces of the net so that it could fold up to make a dice.



1 mark

18. This is a diagram of a garden.

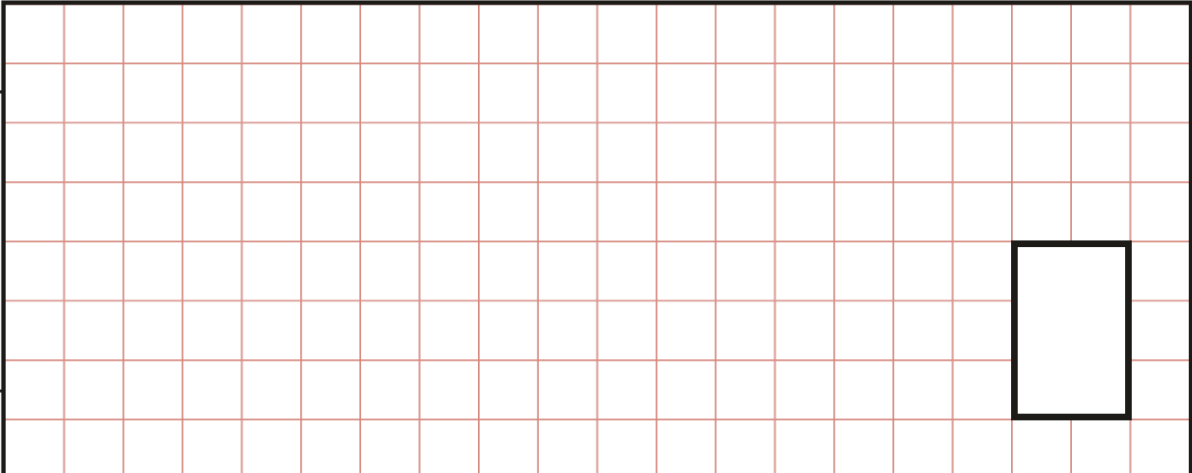
It shows the fractions of the garden covered by the lawn and the patio.



The remaining area is planted with flowers.

What **fraction** of the garden is planted with flowers?

Show your method



2 marks

19.

$$40,488 = 723 \times 56$$

Use the multiplication to complete the calculations below.

$72.3 \times 56 =$

$7230 \times 5.6 =$

$4048.8 \div 723 =$

2 marks

20. In April, Kerrie collects 3, 4 or 5 eggs each day from her hens.
In the first 19 days, Kerrie collects 67 eggs altogether.
There are 30 days in April.

What is the **greatest** number of eggs Kerrie could collect in April?

Show your method

eggs

2 marks

21. Tom finished a sponsored run in 56 minutes and 32 seconds.

Sayed finished 3 minutes and 43 seconds **after** Tom.

How long did Sayed take?

min	sec
------------	------------

1 mark

Kerrie finished the run 9 minutes 38 seconds **before** Tom.

How long did Kerrie take?

min	sec
------------	------------

1 mark