

Key Stage 2

Mathematics

Paper 2: Reasoning

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

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Instructions

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 shows a grid of squares. On the left side, there is a vertical rectangle labeled "Show your method". To the right of this, there is a smaller horizontal rectangle.

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

If you cannot do one of the questions, **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.**

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Marks

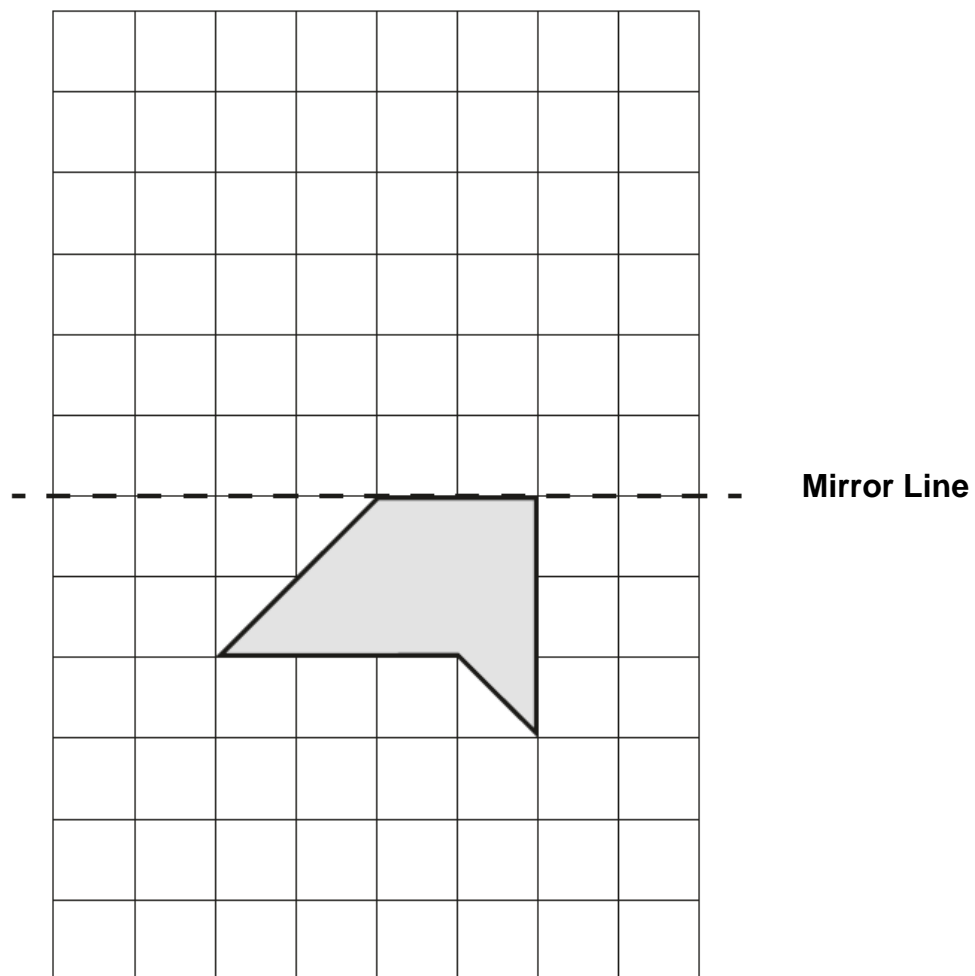
The number under each line at the side of the page tells you the number of marks available for each question.

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1. Here is a shape on a grid.

Complete the design so that it is symmetrical about the mirror line.

Use a ruler.



1 mark

2. Kerrie completes this calculation.

$$\begin{array}{r} 85 \\ - 48 \\ \hline 37 \end{array}$$

Write an **addition** calculation she could use to check her answer.

$$\begin{array}{r} \\ + \\ \hline \end{array}$$

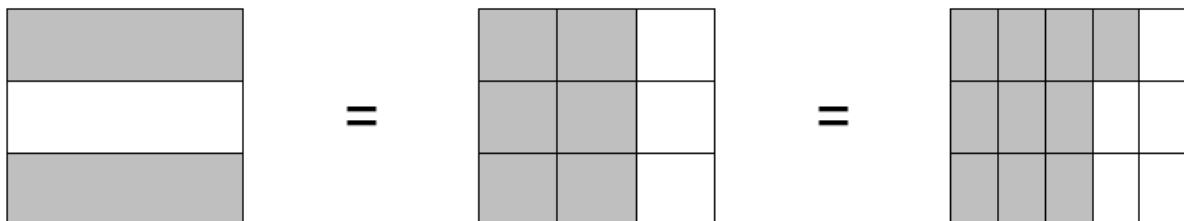
3.

On the line below, mark the point that is 4.7 centimetres from A.



1 mark

4. These diagrams show three equivalent fractions.



Write the missing values.

$$\frac{2}{3}$$

$$\frac{\quad}{9}$$

$$\frac{10}{\quad}$$

1 mark

5. Here are the temperatures in four cities at midnight and midday.

Temperature		
City	At midnight	At midday
Paris	-4°C	-2°C
Oslo	-13°C	-7°C
Rome	3°C	10°C
Warsaw	-6°C	2°C

At **midday**, how many degrees colder was Oslo than Warsaw?

degrees

1 mark

Which city was 8 degrees warmer at midday than at midnight?

1 mark

6. The numbers in this sequence **decrease** by the same amount each time.

763,608 743, 608 723,608 703,608 ...

What is the next number in the sequence?

1 mark

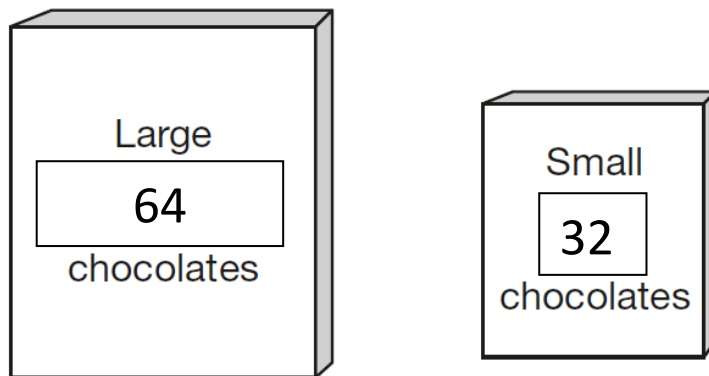
7.

Circle the **two** numbers that are equivalent to $\frac{3}{4}$

0.34 $\frac{75}{100}$ $\frac{34}{100}$ 0.75 3.4 7.5

1 mark

- Each large box has 64 chocolates. Each small box has 32 chocolates.



How many **chocolates** did Kerrie buy altogether?

Show your method

chocolates

2 marks

9. Here are a list of dates when the Commonwealth Games were held.
1970, 1974, 1978, 1982, and 1986.

Tom says...

There must have been a
Commonwealth Games in
the year 2000.



Tom is **not** correct.

Explain how you know.

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

1 mark

10.



Write the correct symbol in each box to make the statements correct.

$$12 \times 12 \quad \square \quad 13 \times 10$$

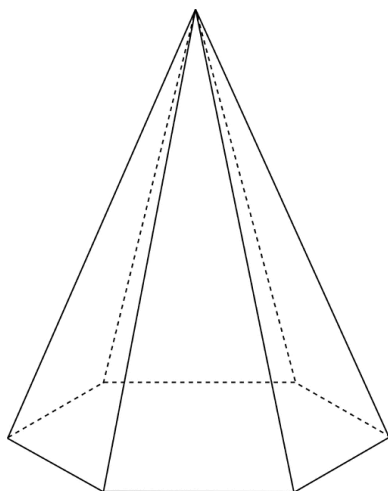
$$180 \div 9 \quad \square \quad 160 \div 4$$

$$30 \times 7 \quad \square \quad 8 \times 20$$

$$560 \div 7 \quad \square \quad 640 \div 8$$

2 marks

11. Here is a drawing of a 3D shape.



Complete the table.

Number of edges	Number of faces	Number of vertices

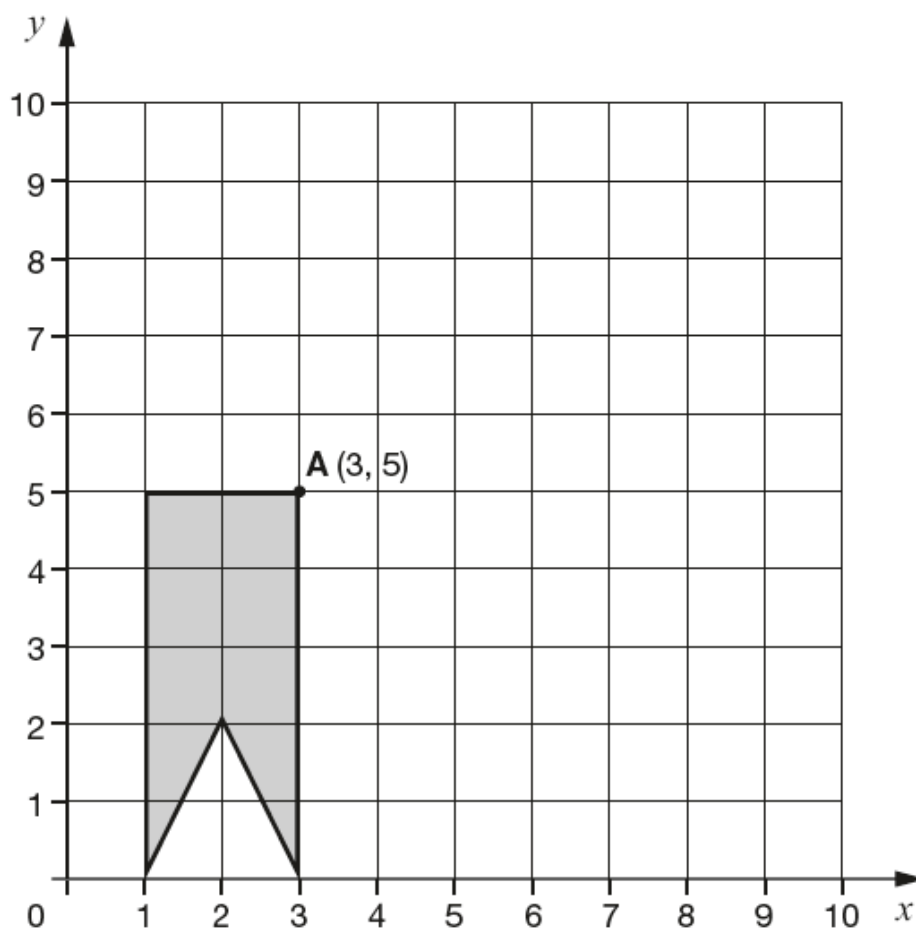
2 marks

12. Here is a shape on a grid.

The shape is translated so that point A moves to (8,9)

Draw the shape in its new position.

Use a ruler.



1 mark

13.

Circle the improper fraction that is equivalent to $9\frac{6}{7}$

$$42/7$$

$$51/7$$

$$61/7$$

$$69/7$$

$$96/7$$

1 mark

14.

$$7/6$$

$$5/6$$

$$6/8$$

Write these fractions in order starting from the smallest.

smallest

1 mark

16. Kerrie wants to use a mental method to calculate $237 - 98$.
She starts from 237

Here are some methods that Kerrie could use.

Tick the methods that are **correct**.

Subtract 100 and then subtract 2

☐

Subtract 7, subtract 90 and then subtract 1

☐

Add on 2 and then subtract 100

☐

Subtract 7 from 8, then subtract 90 from 230 and add the two answers

☐

2 marks

17. There are 32 pupils in a class.
The teacher had 9 litres of orange juice.



He poured 230 millilitres of orange juice for each pupil.

How much orange juice was left over?

Show your method

A large rectangular grid with red lines, intended for showing the calculation method. A small rectangular box is located in the bottom right corner of the grid.

3 marks

- Four of the tickets cost £12 each



The other ticket cost £15



Show
your
method

£

2 marks

19. Tom wants to estimate the answer to this calculation.

$$5\frac{6}{7} - 3\frac{2}{9} + 2\frac{7}{8}$$

Tick the calculation below that is the best estimate.

Tick **one**

$5 - 3 + 3$ ☐

$5 - 3 + 2$ ☐

$6 - 4 + 3$ ☐

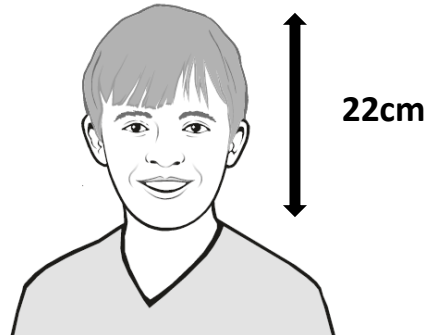
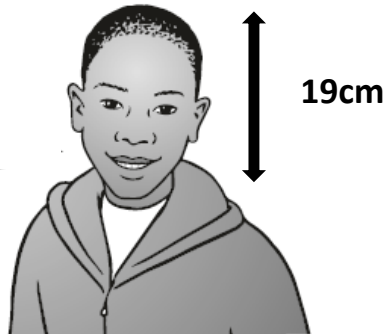
$6 - 3 + 3$ ☐

1 mark

20. The height of a person can be estimated by:

- Measuring the distance from the top of the head to the chin
- Then multiplying the distance by 7 ½

What is the **difference** in the estimated heights of these two people?



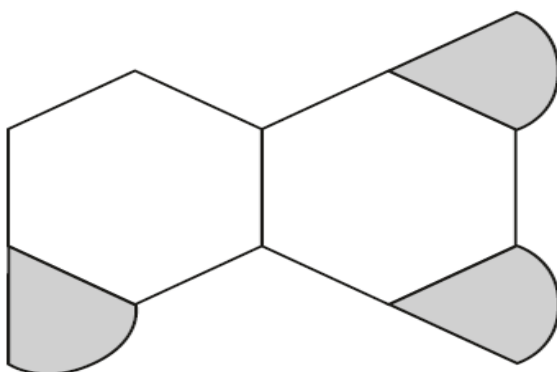
Show your method

cm

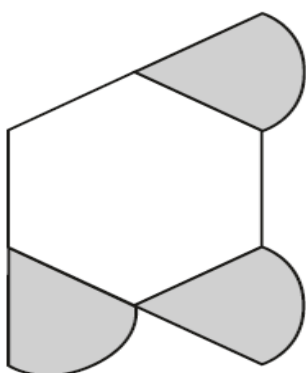
2 marks

21. Sayed is making designs with two different shapes.

He gives each shape a value.

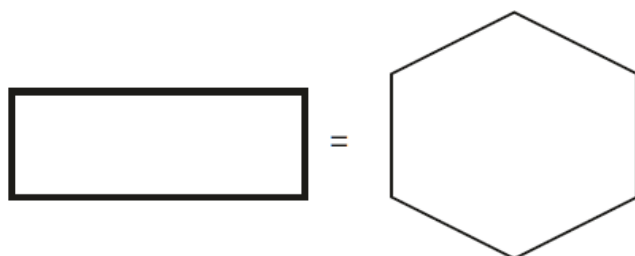
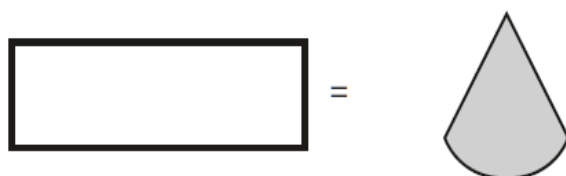


Total value is 167

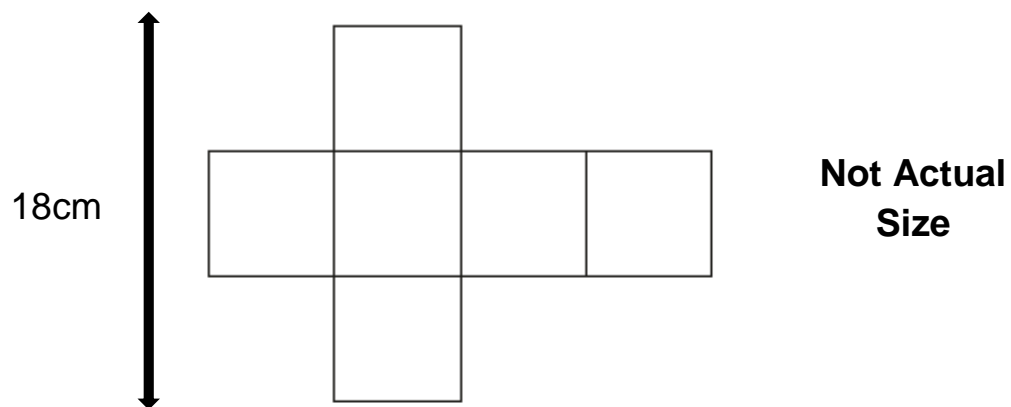


Total value is 118

Calculate the value of each shape.



22. This is a net of a cube.



What is the volume of the cube?

cm³

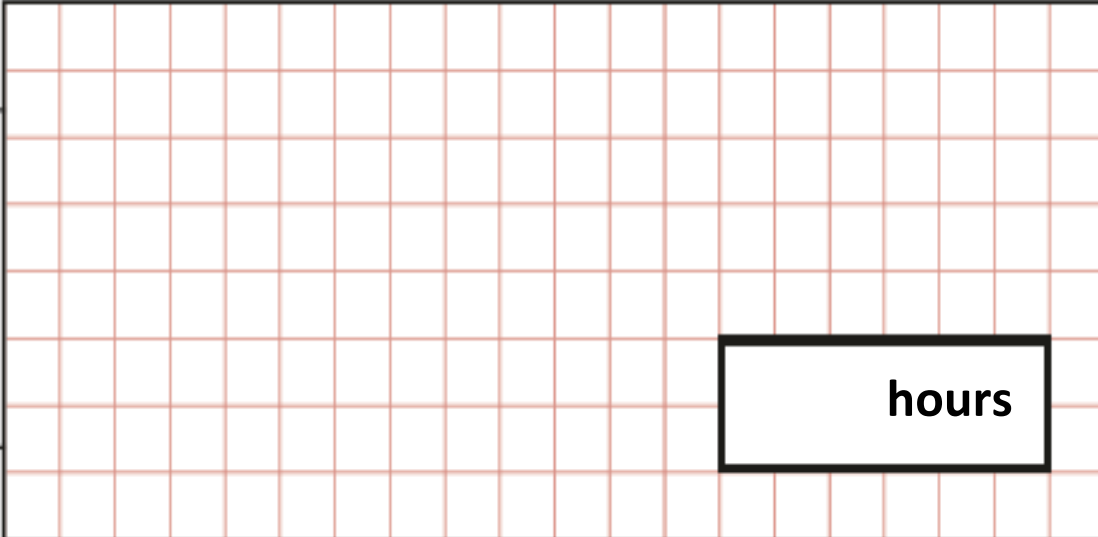
1 mark

23. The length of a year on Earth is $365 \frac{1}{4}$ days.

The length of a year on Jupiter is 12 times the length of a year on Earth.

What is the length of a year on Jupiter, in **hours**?

Show
your
method



hours

2 marks