Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
Cambridge Secondary 1 Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

MATHEMATICS

Paper 1

1 hour

Candidates answer on the Question Paper.

Additional Materials: Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
NO CALCULATOR ALLOWED.

You should show all your working in the booklet.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 50.

1 Here is a formula.

$$y = 8x$$

Use this to calculate

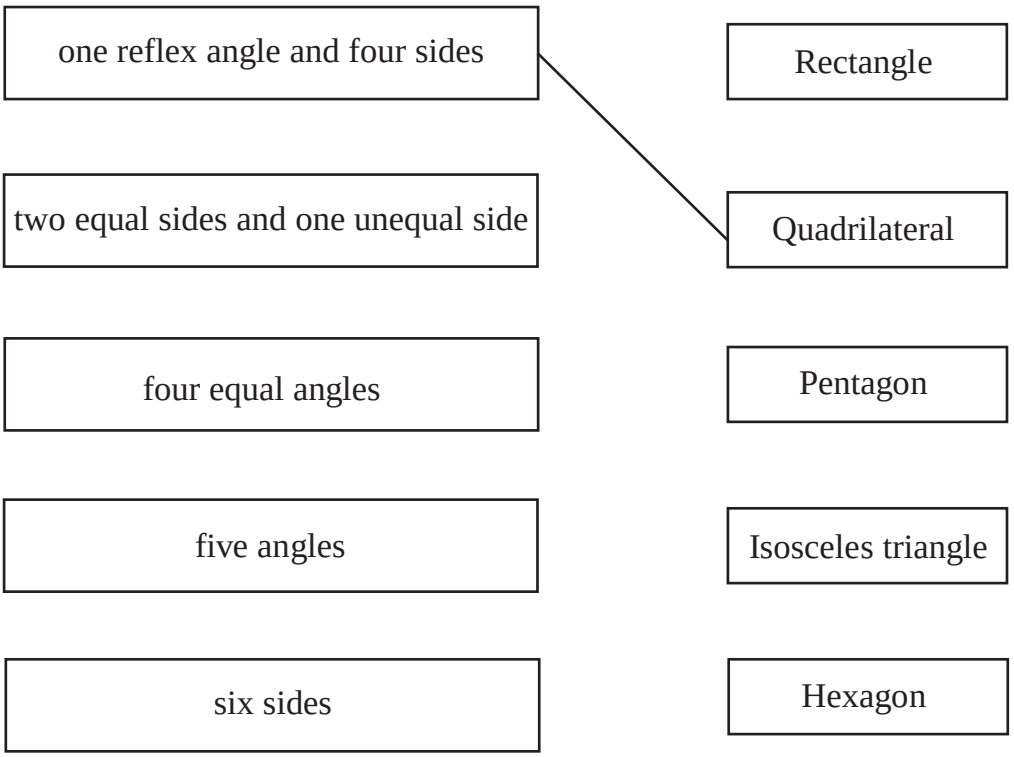
(a) y when $x = 30$

$y =$ ..... [1]

(b) x when $y = 56$

$x =$ ..... [1]

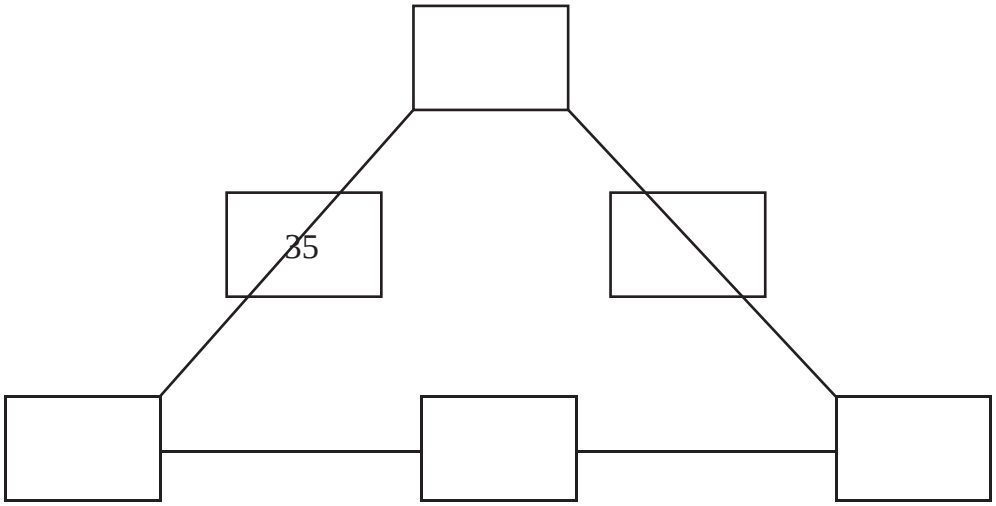
2 Draw a line to match each description to **one** shape.
The first one has been done for you.



[1]

3 The sum of the three numbers on each side of the triangle equals 100

Use the numbers 50, 59, 26, 24 and 15 to complete the diagram.
Write one number in each box.



[2]

4 **(a)** Complete these calculations.

0.64	×	.....	=	640
6400	÷	.....	=	64
.....	×	100	=	6.4

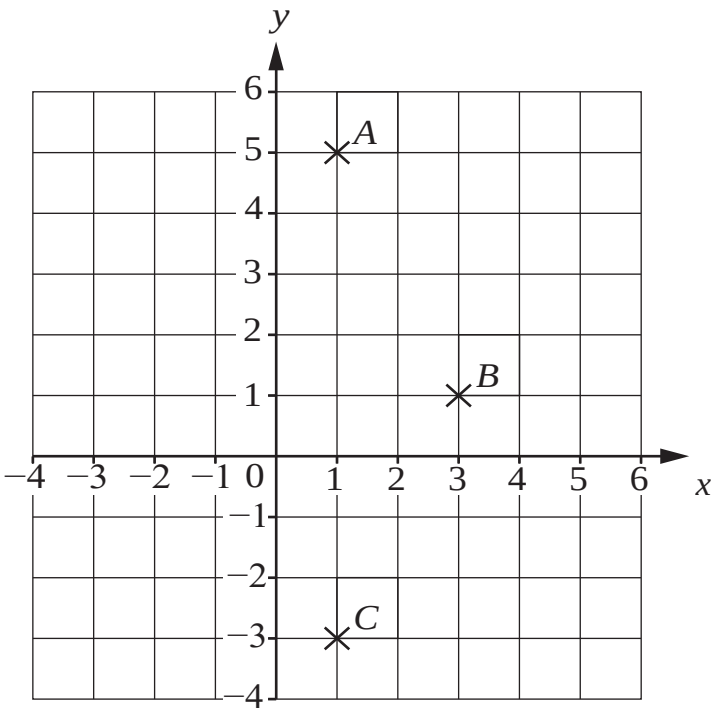
[2]

(b) Write down in words the value of the digit 4 in each of these numbers.
The first one has been done for you.

Number	**Value of digit 4**
249.6	4 tens
0.487	4 .....
0.0248	4 .....

[1]

5 The grid shows the positions of three points *A*, *B* and *C*.



(a) Write down the coordinates of *C*.

(..... , ...) [1]

(b) *ABCD* is a rhombus.
Plot the position of point *D* on the grid.

[1]

6 Complete these statements.

(a) 35% of 60 = ... [1]

(b) 25% of ..... = 20 [1]

7 Bobbie scores m marks in a test.

(a) Dan scores two marks **less** than Bobbie.

Write down an expression for Dan's mark in terms of m.

..... [1]

(b) Georgia scores three **times** as many marks as Bobbie.

Write down an expression for Georgia's mark in terms of m.

..... [1]

8 **(a)** A bottle contains 250 millilitres of lemonade.

Work out how many **litres** of lemonade there are in 6 of these bottles.

..... litres [1]

(b) Jenny has a suitcase with a mass of 18.1 kg and a handbag with a mass of 800 g.

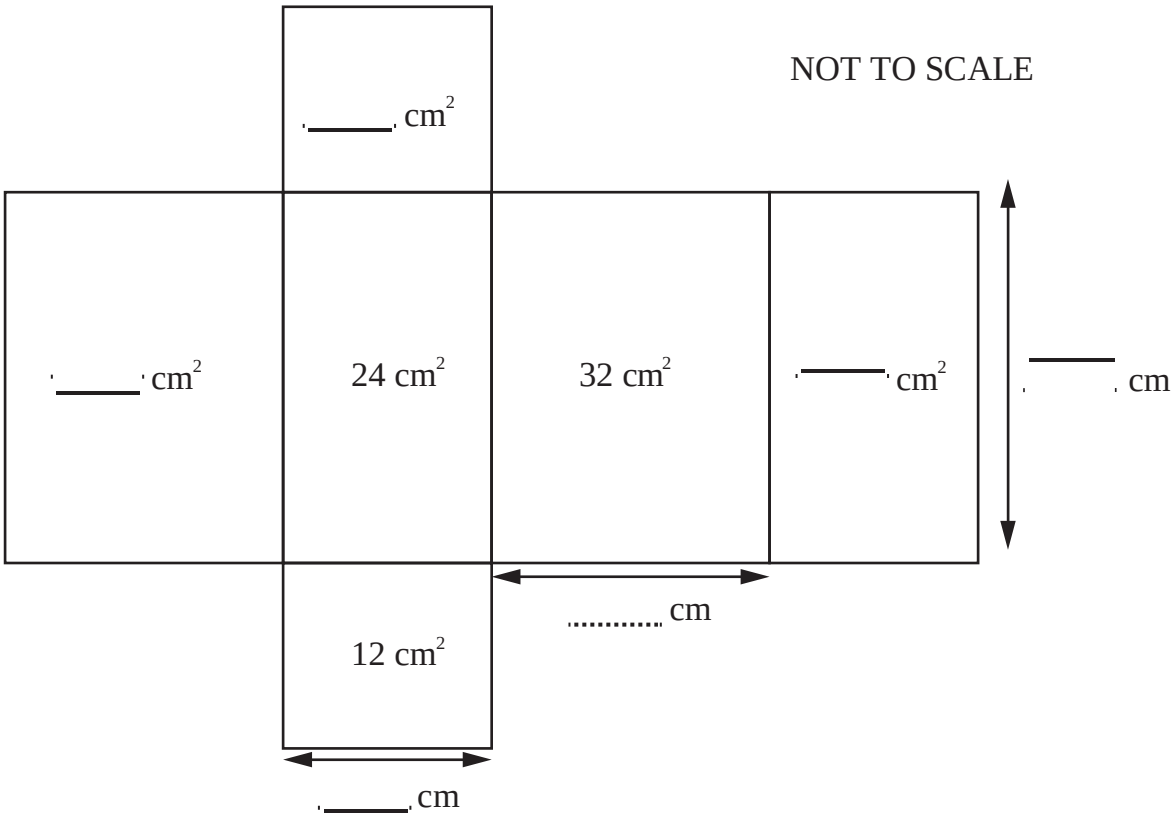
Work out the total mass of Jenny's suitcase and handbag in **kilograms**.

..... kilograms [1]

9 Work out the lowest common multiple of 6 and 10

..... [1]

10 The diagram shows the net of a cuboid.
The areas of some of its faces are shown.

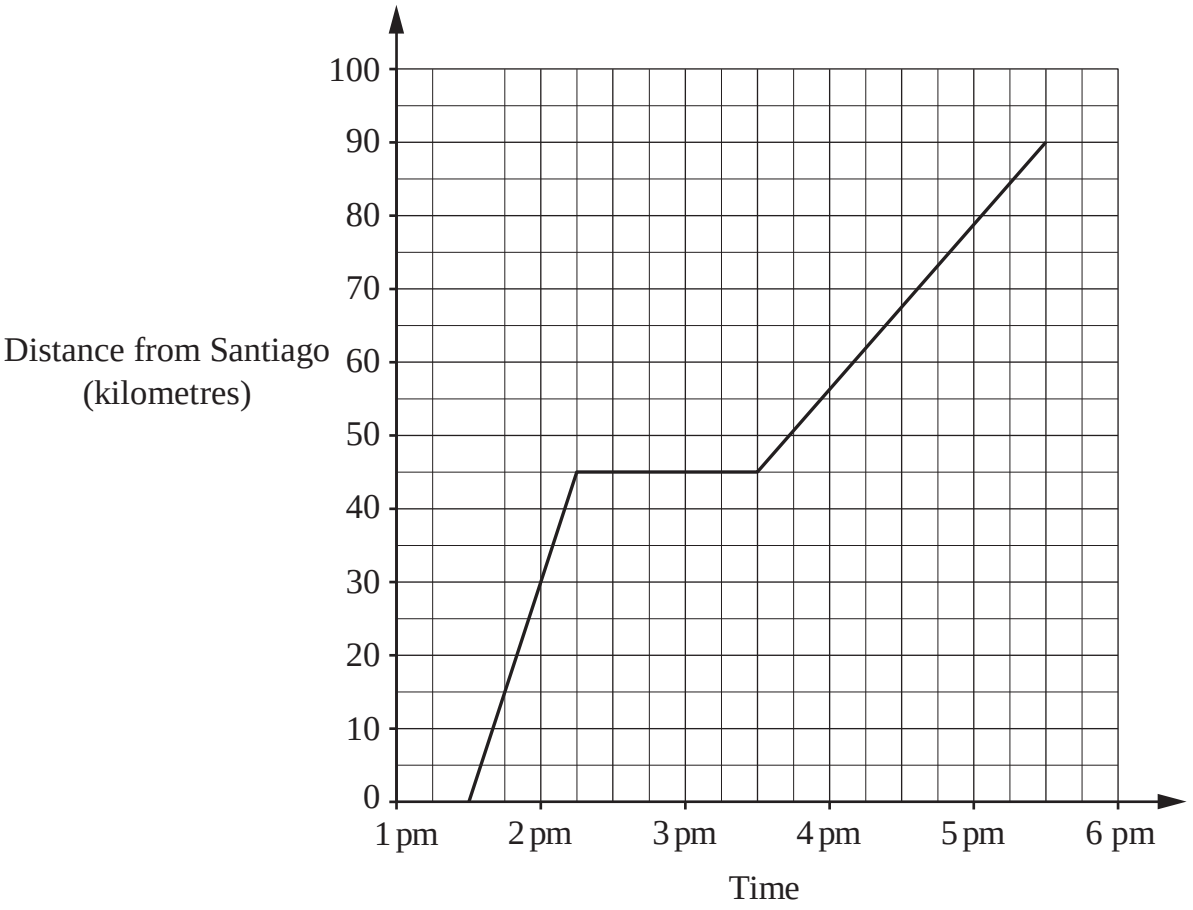


The side lengths of the cuboid are all whole numbers.

Complete the diagram to show the missing side lengths of the cuboid and the areas of the other faces.

[3]

11 The graph shows Sophia's journey from Santiago to Rancagua.



Chen travels the reverse journey from Rancagua to Santiago.
He leaves Rancagua at 2.30 pm and arrives at Santiago at 5.15 pm.
He travels at a constant speed.

(a) Draw a line on the graph to show Chen's journey. [1]

(b) Write down the distance they were from Santiago when they passed each other.

..... kilometres [1]

12 Work out

2.55×3.6

..... [2]

13 The exterior angle of a regular polygon is 72°.

Work out the number of sides of this polygon.

..... [1]

14 One of these statements is wrong.

Put a cross (✕) next to the statement that is **wrong**.

$48 \div 20 = 48 \div 2 \div 10$ ☐

$48 \div 20 = 48 \times 5 \div 100$ ☐

$48 \div 20 = 20 \div 48$ ☐

$48 \div 20 = 48 \div (4 \times 5)$ ☐

[1]

15 Work out

$$\left(3 - \frac{2}{3}\right)\left(1 - \frac{5}{7}\right)$$

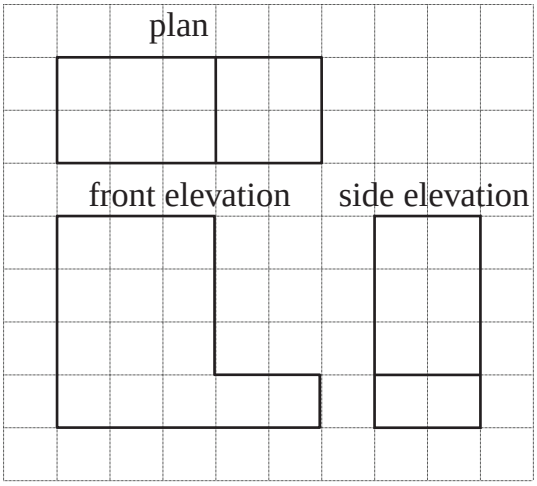
..... [2]

16 Complete the table by ticking (✓) the correct column for each measurement.

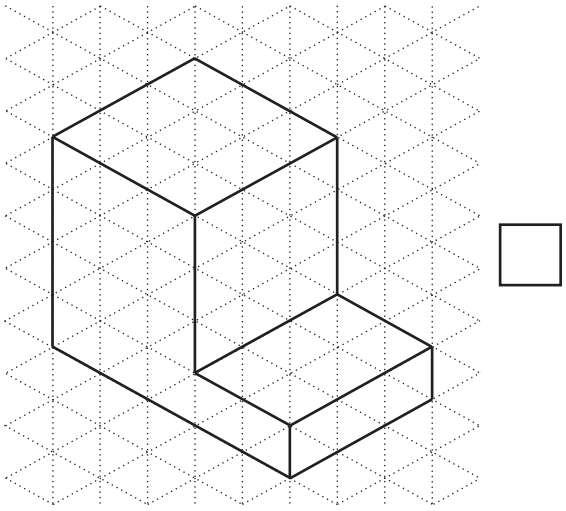
	Less than 1 litre	Equal to 1 litre	More than 1 litre
1400 millilitres			
1000 cm^3			
100 000 mm^3			

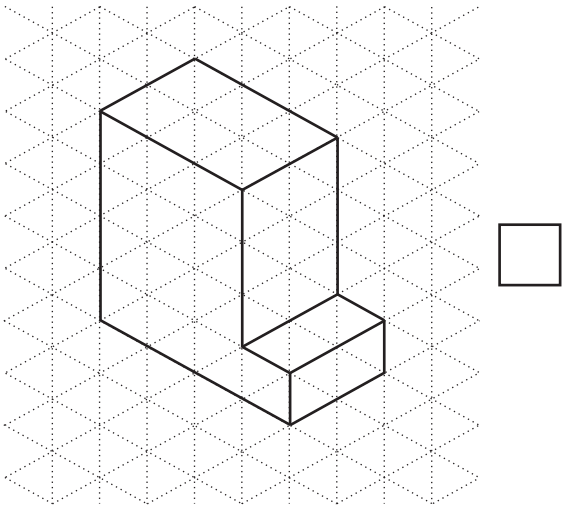
[2]

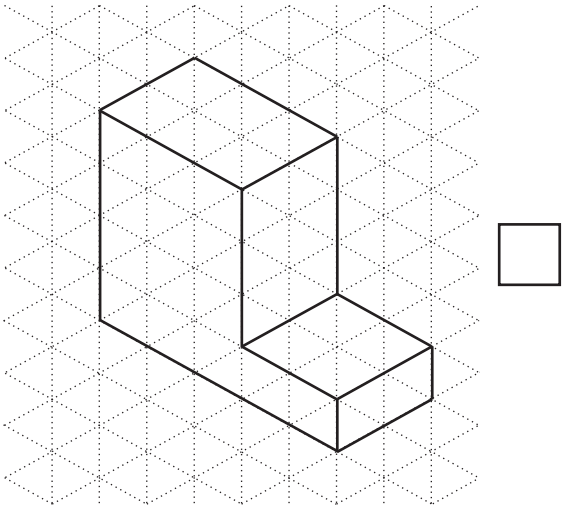
17 (a) The diagrams show the plan and elevations for a 3D shape.

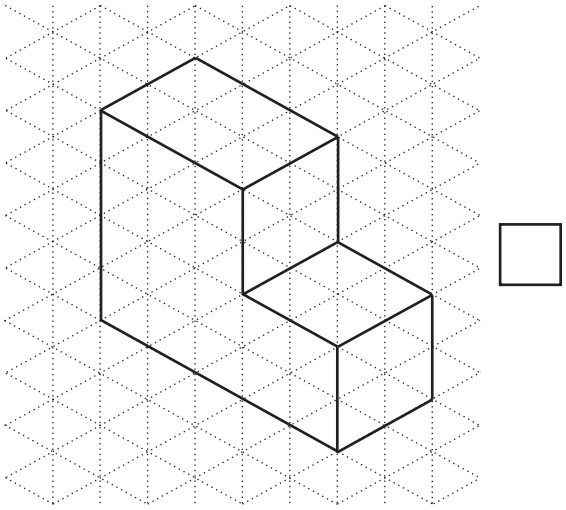


Tick (✓) which 3D shape the plan and elevations show.



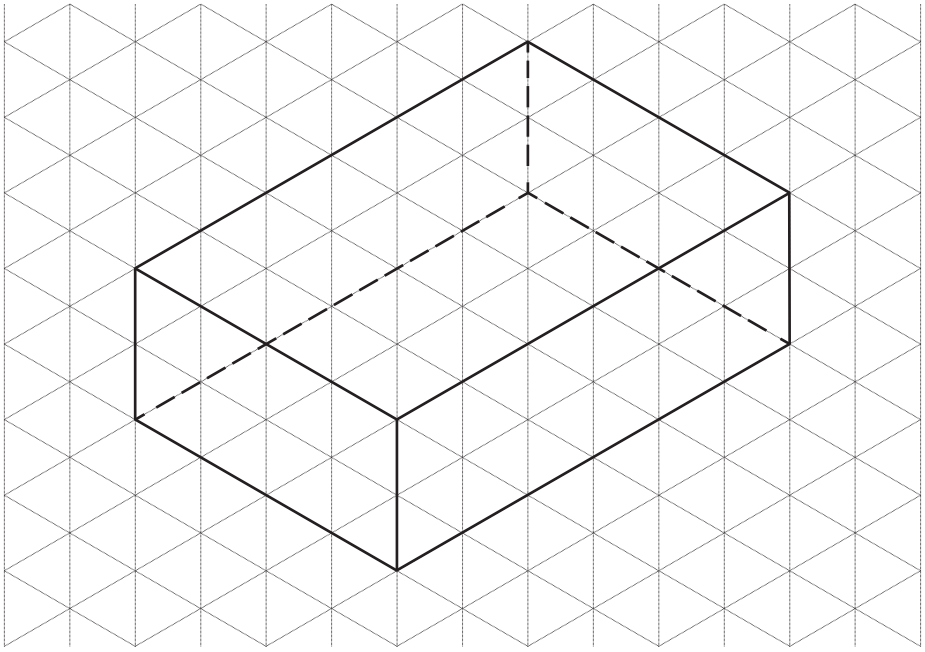






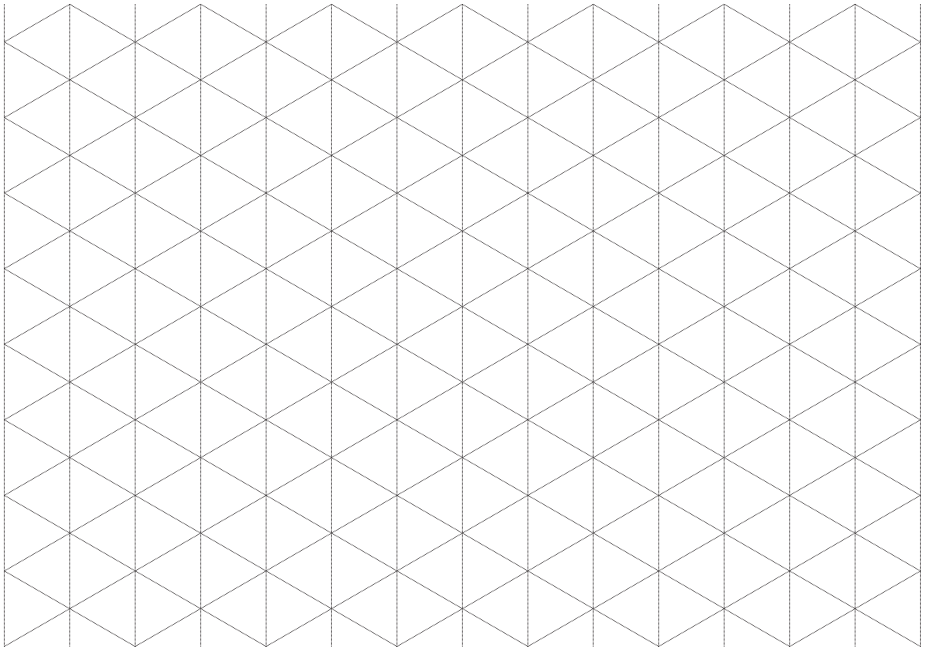
[1]

(b) Here is a drawing of a cuboid measuring 2 cm by 4 cm by 6 cm.



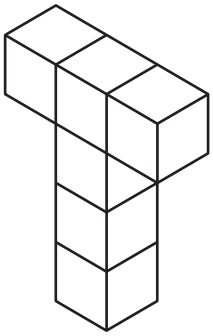
A different cuboid measures 2 cm by 3 cm by 5 cm.

Draw this cuboid on the isometric paper below.



[1]

18 A shape is made from 6 cubes.



Write down the number of planes of symmetry for this shape.

..... [1]

19 Calculate

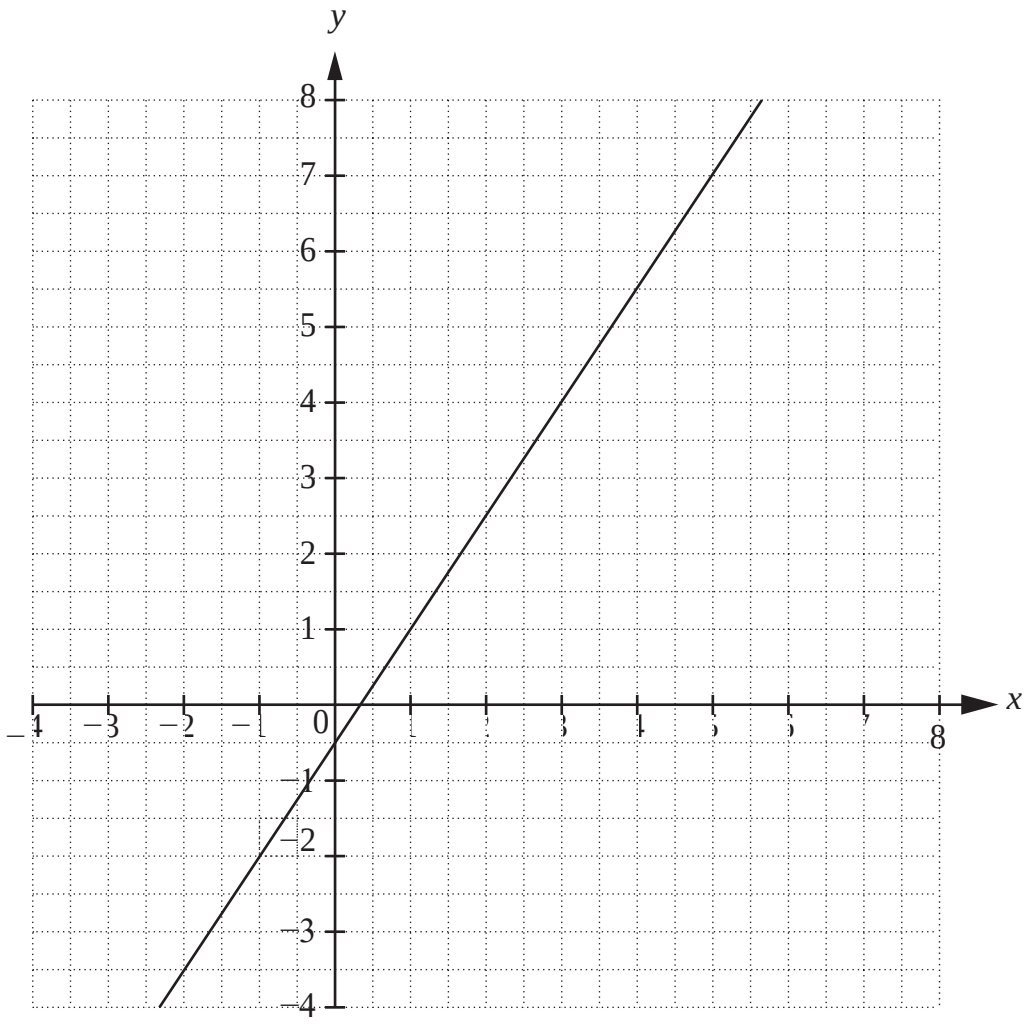
(a) $\dfrac{34 \times 19 + 36 \times 19}{35}$

..... [2]

(b) $\dfrac{54^2}{27}$

..... [2]

20 The graph shows the line with equation $2y = 3x - 1$



(a) Find the gradient of the line.

..... [1]

(b) Draw the line $x + 2y = 7$ on the grid.

[2]

(c) Use your answer from part **(b)** to solve the simultaneous equations

$$2y = 3x - 1$$
$$x + 2y = 7$$

$x =$ ..... $y =$ ..... [1]

21 A restaurant manager records the time (in minutes) that customers wait for their food to be served.
The back to back stem-and-leaf diagram shows his results for customers eating at lunchtime and in the evening.

Lunchtime								Evening								
				9	8	8	0	9								
9	8	6	5	2	1	0	1	2	4	5	5	7	7	8	8	9
		5	5	3	2	1	2	0	1	4	6	7	9			
						2	3	1	3	5	6	8				
							4	0	1							

Key: 2 ∃ 1 represents 32 minutes at lunchtime and 31 minutes in the evening.

Some summary information about these times is shown in the table.

	Lunchtime	Evening
Median time (minutes)		21
Range (minutes)	24	

(a) Complete the table.

[2]

(b) Tick (✓) to show when waiting times were generally longer.

At lunchtime ☐

In the evening ☐

Explain how you can tell from the values in your **table**.

.....

.....

[1]

(c) Tick (✓) to show when waiting times were more spread out.

At lunchtime ☐

In the evening ☐

Explain how you can tell from the values in your **table**.

.....

..... [1]

22 Hassan is investigating how long it takes people to travel to work.
He designs a data collection sheet.

The first column is shown here.

Time (t minutes)
$0 < t \leq$ _____
_____ $< t \leq$ _____
_____ $< t \leq$ _____
_____ $< t \leq 60$

Write the missing values so that all intervals have equal width.

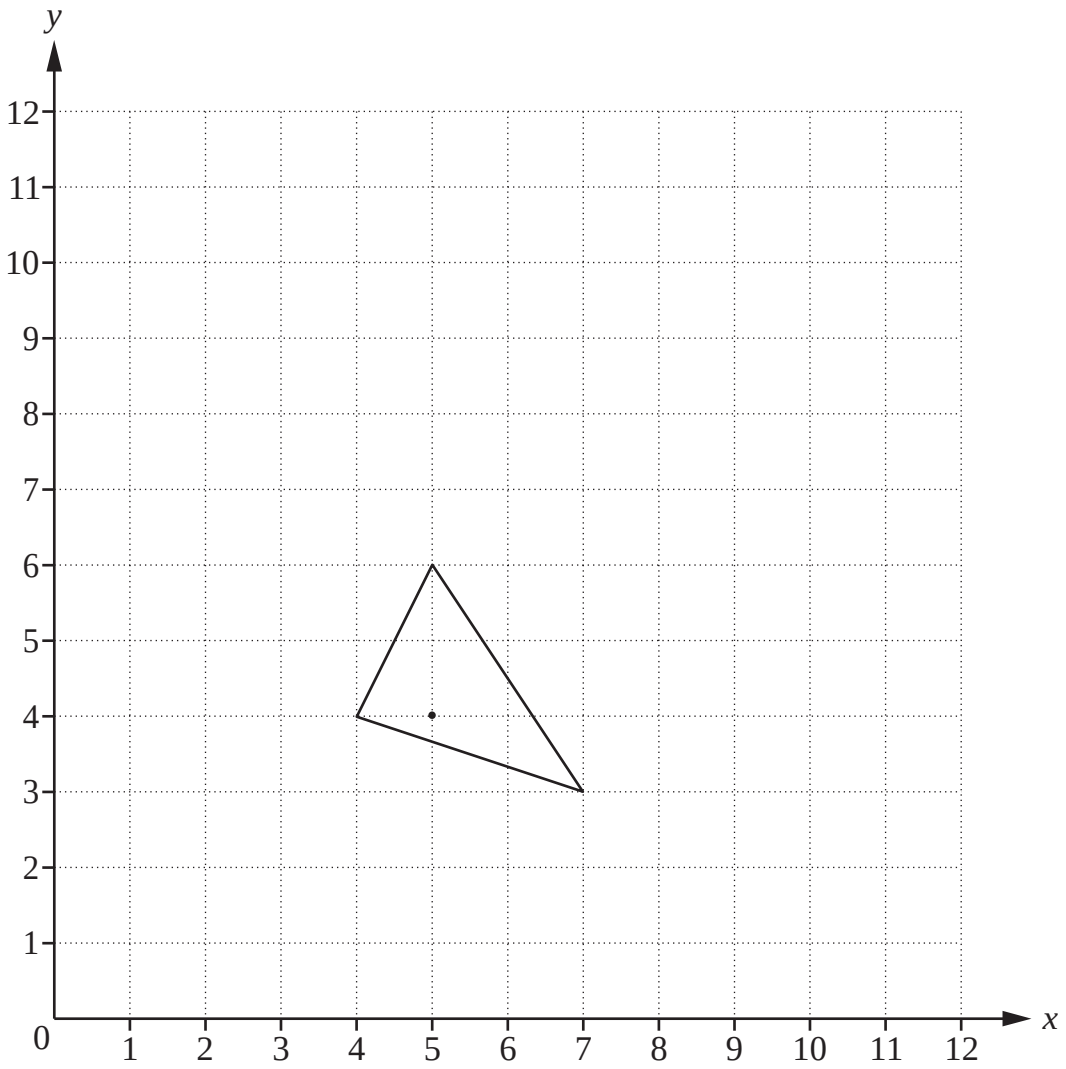
[1]

23 Write the correct fraction in the box.

$$\square \times \frac{3}{4} = \frac{1}{2} + \frac{1}{6}$$

[2]

24 The diagram shows a triangle drawn on a grid.



Enlarge the triangle with scale factor 3 and centre (5, 4). [2]