Cambridge Assessment International Education

Mathematics

Stage 7

Paper 2 **2024**

Cambridge Lower Secondary Progression Test

Name

Class

Date

1 hour

Additional materials: Calculator
Geometrical instruments
Tracing paper (optional)

INSTRUCTIONS

- Answer **all** questions.
- Write your answer to each question in the space provided.
- You should show all your working on the question paper.
- You may use a calculator.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [ ].

1 Find the lowest common multiple of 25 and 40

..... [1]

2 **(a)** In a sale, prices are reduced by 20%.

Find the sale price of a shirt as a percentage of the original price.

.....% [1]

(b) Calculate 43% of $1500

$ ..... [1]

3 Simplify.

$5a - 2a + a$

.....

$\frac{3b}{10} + \frac{4b}{10}$

.....

[2]

4 Complete the conversion.

One hectare = ... square metres. [1]

5 Find the value of $20 - \frac{p}{4}$ when $p = 8$

..... [1]

6 **(a)** Write 2.37 correct to one decimal place.

..... [1]

(b) Work out.

$$\sqrt{3 \times 17}$$

Give your answer correct to two decimal places.

..... [2]

7 Here is a 1 cm square grid.

Draw a right-angled triangle with an area of 6 cm^2 on the grid.

[1]

8 **(a)** $52.10 < x < 52.11$

Write down a possible decimal value for x.

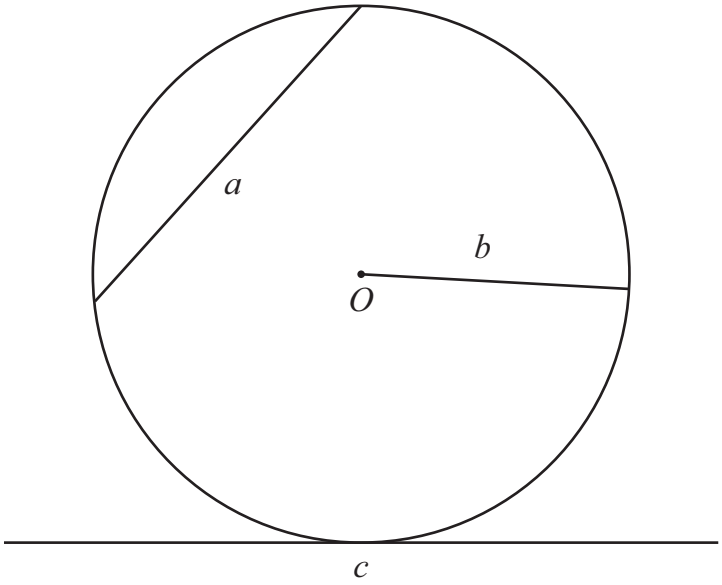
..... [1]

(b) $1\frac{3}{4} < y < \frac{15}{8}$

Write down a possible decimal value for y.

..... [1]

9 Here is a circle with the centre marked O.



Write down the mathematical name for each of the lines a, b and c.

Line a = ...

Line b = ...

Line c = ...

[2]

10 Point A has coordinates $(1, 4)$.
Point B has coordinates $(1, 6)$.

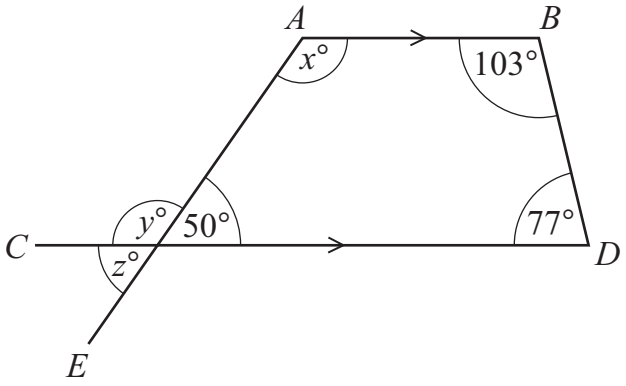
(a) Find the length of AB.

..... [1]

(b) Write down the equation of the line passing through A and B.

..... [1]

11 AB and CD are parallel lines.
AE is a straight line.



NOT TO SCALE

(a) Find the value of x.

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

(b) Find the value of y.

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

(c) Find the value of z.

$z =$ ..... [1]

12 **(a)** Solve.

$5x = 35$

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

(b) Solve.

$17 - 4y = 5$

$y =$ ..... [2]

13 Angelique looks at the numbers from 10 to 90

She says,

'Between 10 and 90, there are 6 **more** square numbers than cube numbers.'

Tick (✓) to show if she is correct or not correct.

Correct ☐ Not correct ☐

Explain how you know.

.....

.....

.....

[2]

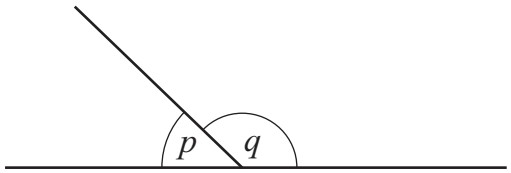
14 Naomi is y years old.

Rajiv is twice as old as Naomi was 3 years ago.

Write an expression, in terms of y, for Rajiv's age.

..... [1]

15 Angles p and q are on a straight line.



NOT TO SCALE

The ratio of angle p to angle q is 2 : 7

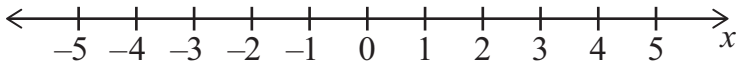
Find angle p and angle q.

angle p = ... °

angle q = ... °

[2]

16 Represent $x < 1$ on the number line.



[1]

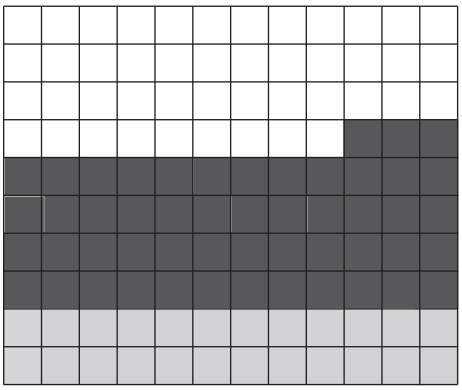
17 A map has a scale of 1 : 200 000

Two cities are 30 cm apart on the map.

Calculate the actual distance between the cities in kilometres.

..... km [2]

18 The waffle diagram shows the proportions of students in a school with and without brothers and sisters.



Key

- no brothers or sisters
- one brother or sister
- more than one brother or sister

(a) Calculate the percentage of students with **no brothers or sisters**.

.....% [2]

(b) A pie chart is drawn to show the same information as the waffle diagram.

Work out the angle on the pie chart representing the proportion of students with **one brother or sister**.

.....° [2]

19 A shop sells picture frames with different length to width ratios.

Ratio 1	4 : 3
Ratio 2	16 : 9
Ratio 3	3 : 2

Tick (✓) the correct ratio for each size of frame.
One has been done for you.

Size of frame	Ratio 1	Ratio 2	Ratio 3
30 cm by 22.5 cm	✓		
48 cm by 27 cm			
88 cm by 66 cm			
390 mm by 260 mm			

[2]

20 The table shows the mass, in kilograms, of some parcels.

Mass (kg)	Number of parcels
3.0	1
3.5	3
4.0	6
4.5	8
5.0	2

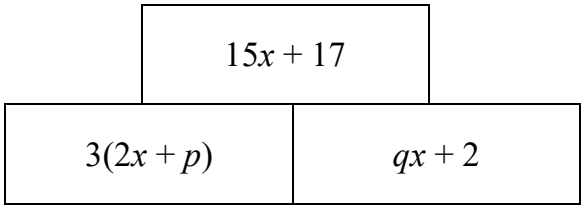
(a) Calculate the mean mass.

..... kg [2]

(b) Find the median mass.

..... kg [1]

21 In the diagram, the expression on the top row is the sum of the two expressions on the second row.



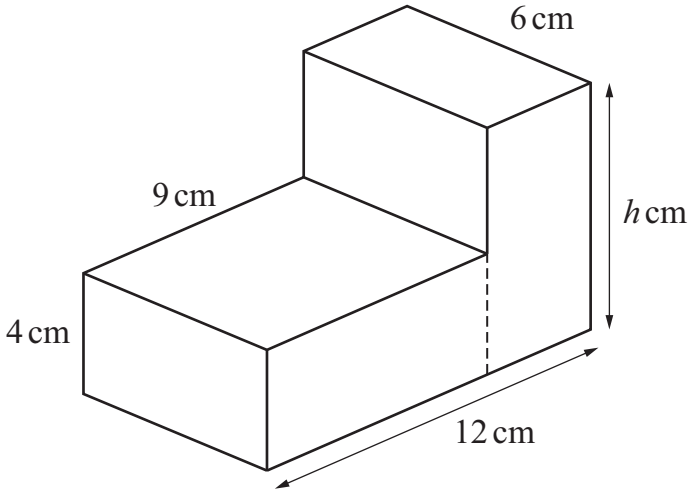
Find the value of p and the value of q.

$p =$ .....

$q =$ .....

[2]

22 The diagram shows a prism formed by joining two cuboids.



NOT TO SCALE

The volume of the prism is 351 cm^3.

Find the value of h.

h = ... [3]

23 Point A has coordinates (3, 6).
Point B has coordinates (7, 6).
ABC is an isosceles triangle.

Draw a ring around each of the possible coordinates for point C.

(5, –1) (2, 5) (7, 10) (–5, 1) (3, 2)

[2]

24 Chen records the number of goals he scores for his team in each of 4 seasons.
He calculates the mode, mean and range of his data.

- The mode is 19 goals.
- The mean is 21 goals.
- The range is 10 goals.

Find the number of goals he scores in each of the 4 seasons.

....

[3]