Cambridge Assessment International Education

Cambridge Lower Secondary Progression Test

Mathematics paper 1

Stage 9

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55 minutes

For Teacher's Use	
Page	**Mark**
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11	
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Total	

Name .....

Additional materials: Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Answer **all** questions in the spaces provided on the question paper.

Calculators are **not** allowed.

You should show all your working on the question paper.

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 45.

For Teacher's Use

1 Complete these statements.

$\square$ $+ \ -3 = 6.3$

$\square$ $\times \ -3 = 6.3$

$\square$ $\div \ -3 = 6.3$

[2]

2 Match each calculation to its answer.
The first one has been done for you.

0.6×0.6	0.36
0.64×0.4	1.6
$0.64 \div 0.4$	0.625
$0.4 \div 0.64$	0.256

[1]

3 **(a)** Draw a ring around the best estimate of $\sqrt{56}$

7.1 14 7.5 7.9 28

[1]

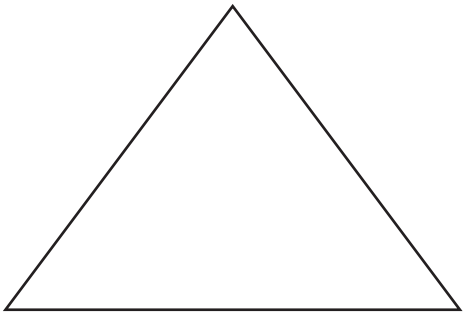
(b) Draw a ring around the best estimate of $\sqrt[3]{25}$

2 3 5 8

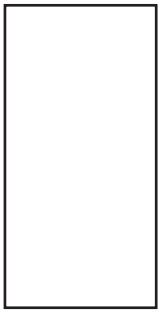
[1]

4 These are the elevations and plan of a shape.

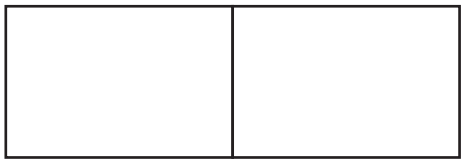
Front elevation



Side elevation



Plan



Write down the name of the shape.

..... [1]

5 One of these statements is wrong.

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

$26 \times 25 = 26 \times 100 \div 4$ ☐

$26 \times 25 = (26 \times 5) \times (26 \times 5)$ ☐

$26 \times 25 = 25 \times 26$ ☐

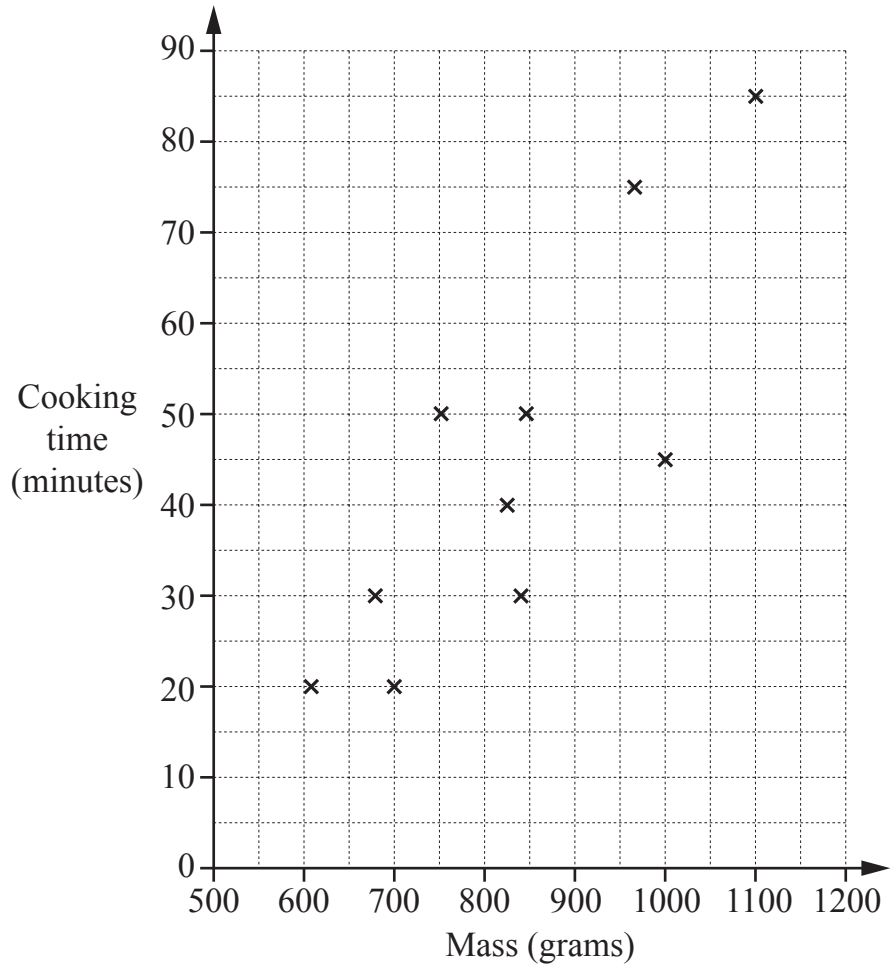
$26 \times 25 = (30 \times 25) - (4 \times 25)$ ☐

[1]

[Turn over

For Teacher's Use

6 Oliver bakes 10 cakes.
The scatter graph shows the mass (in grams) of each cake and the cooking time (in minutes).



(a) Write down the number of Oliver's cakes that have a mass of more than 800 grams.

..... [1]

(b) Describe the relationship between the mass of a cake and the cooking time.

.....

..... [1]

(c) Oliver sees a recipe for a cake with a mass of 800 grams.
The recipe says the cooking time is 80 minutes.

Use the graph to explain why this cooking time may be incorrect.

.....

..... [1]

For Teacher's Use

7 Here is an arithmetic sequence.

24, 19, 14, 9, 4, …

Find an expression for the nth term of the sequence.

..... [2]

8 Calculate.

45.7×3.6

..... [2]

9 **(a)** Write down the value of 2^0

..... [1]

(b) Write 2^{-3} as a fraction.

..... [1]

[Turn over

10 The scale drawing shows the position of two schools, A and B.

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The scale is 1 : 200 000

(a) Work out the real-life distance between school A and school B.
Give your answer in kilometres.

..... km [1]

(b) School C is on a bearing of

085° from school A,
305° from school B.

Use your protractor to mark the position of school C on the scale drawing. [2]

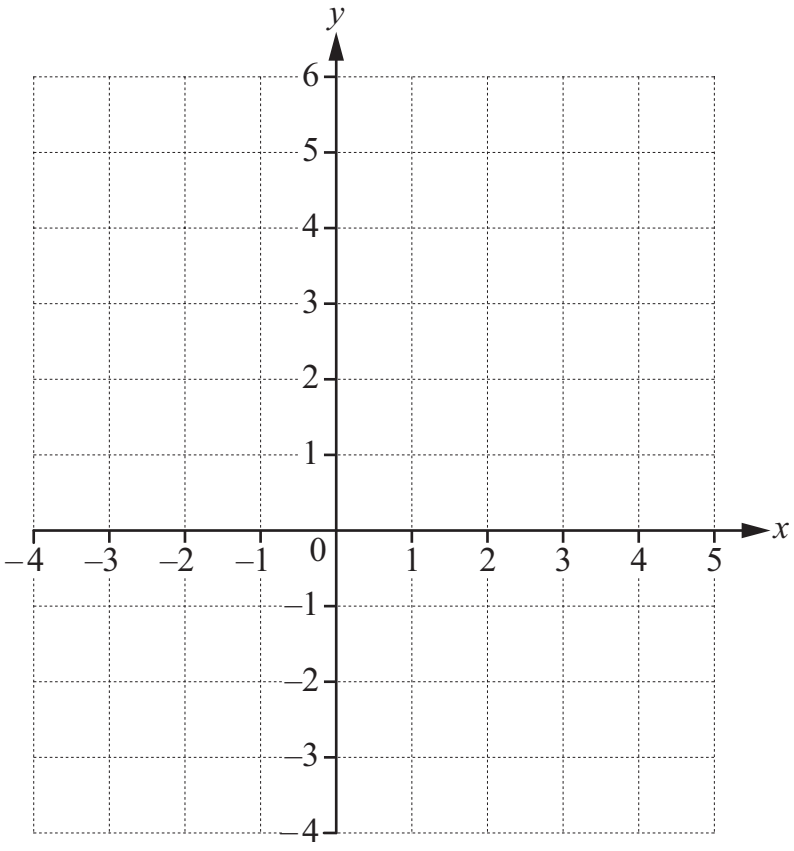
For Teacher's Use

11 **(a)** Complete the table of values for the equation $2y - 2 = 4x$

x	–1	0	2
y	–1		

[1]

(b) Use your results to plot the graph of $2y - 2 = 4x$ on this grid.



[2]

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12 Work out.

$$4\frac{1}{2} \times 3\frac{1}{3}$$

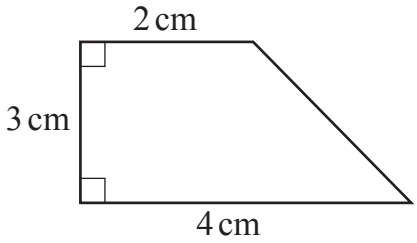
..... [2]

13 Expand and simplify.

$$(x - 5)(x + 3)$$

..... [2]

14 The cross-section of a prism is shown in the diagram.



NOT TO SCALE

The prism has a length of 15 cm.

Calculate the volume of the prism.

..... cm^3 [2]

15 Tick (✓) to show whether each of these statements is true or false.

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	True	False
$10^{-1} = 0.1$	☐	☐
$400 \times 10^4 = 400\,000$	☐	☐
$0.3 \div 10^{-2} = 0.003$	☐	☐
$0.8 \times 10^3 = 0.8 \div 10^{-3}$	☐	☐

[2]

16 The diagram shows two rectangles that both have a width of 6 cm.

NOT TO SCALE

The difference between the **perimeters** of the two rectangles is 10 cm.

Calculate the difference between the **areas** of the two rectangles.

..... cm^2 [2]

17 Mia has a box that contains a large number of coloured cubes.
She picks a cube at random.
The probabilities of her picking a red, a blue or a green cube are shown in the table.

Colour	Red	Blue	Green
Probability	0.35	0.25	0.3

(a) Explain how you know that the box must also contain some cubes of other colours.

.....

..... [1]

(b) Half of the other coloured cubes are yellow.

Work out the probability that Mia picks a yellow cube.

..... [1]

18 Write this expression as a single fraction.

$$\frac{3a}{5} - \frac{a}{5}$$

..... [1]

19 $17^3 = 4913$ $34 = 2 \times 17$

Use these facts to work out 34^3

..... [2]

20 Use algebra to solve these simultaneous equations.

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$$3x + y = 5$$
$$x - 2y = 4$$

You must show how you worked out your answer.

$x =$ .....

$y =$ .....

[3]

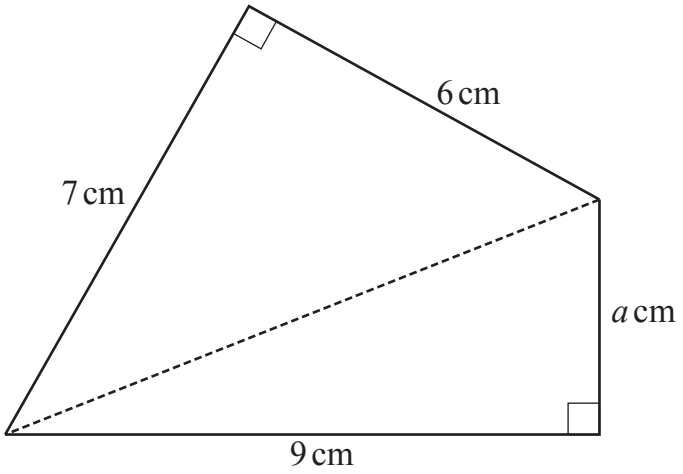
For Teacher's Use

21 The price of an electronic book is \$2.40
The price of the electronic book is 75% **less than** the price of the paper book.

Calculate the price of the paper book.

\$..... [2]

22 The diagram shows a quadrilateral containing two right angles.



NOT TO SCALE

Calculate the value of a.

a = ... [3]