Cambridge Assessment International Education

Mathematics

Stage 7

Paper 1 **2023**

Cambridge Lower Secondary Progression Test

Name

Class

Date

1 hour

Additional materials: 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 are **not** allowed to 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 Work out.

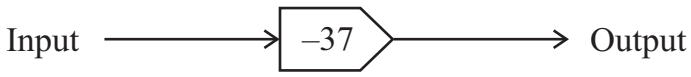
$4 \div 10^2$

..... [1]

2 Write 8% as a decimal.

..... [1]

3 Here is a function machine.



(a) Find the output when the input is 21

..... [1]

(b) Find the input when the output is −20

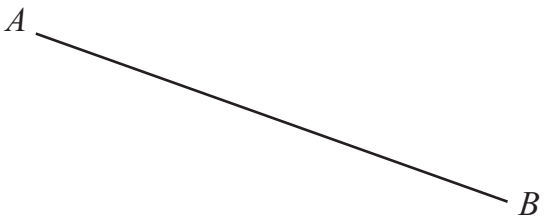
..... [1]

4 Draw a ring around **each** number that is a common factor of 30 and 75

5 15 25 75

[1]

5 Draw a line that is perpendicular to the line AB.



[1]

6 Here are the first four terms in a sequence.

$$-22, \quad -17, \quad -12, \quad -7, \quad \ldots$$

Complete these sentences.

The next **two** terms in the sequence are ..... and .....

The term-to-term rule for the sequence is .....

[2]

7 Mia predicts, 'When the number of hours of sunshine increases, the maximum temperature also increases.'
She wants to know if her prediction is correct.
She records the number of hours of sunshine and the maximum temperature every day for ten days.

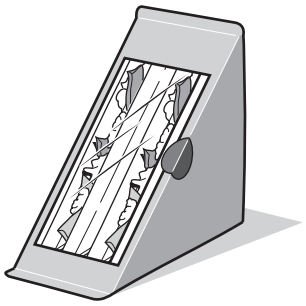
Draw a ring around the most appropriate representation to display this information.

bar chart scatter graph Venn diagram line graph pie chart

[1]

8 A sandwich shop has these 40 sandwiches for sale.

Sandwiches
• 10 salmon
• 20 tuna
• 7 chicken
• 3 cheese



One of these sandwiches is chosen at random.

(a) Draw a line to match each choice to the **most appropriate** likelihood.

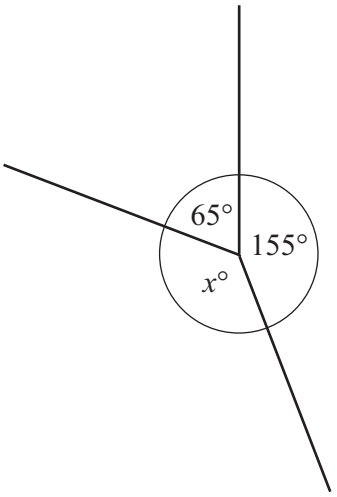
Choice	**Likelihood**
A tuna sandwich is chosen.	likely
	unlikely
A chicken sandwich is chosen.	certain
	even chance
An egg sandwich is chosen.	impossible

[2]

(b) Write down the probability that a cheese sandwich is chosen.

..... [1]

9 The diagram shows three lines meeting at a point.



NOT TO SCALE

Find the value of x.

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

10 Eva says,

'I know that 14 107 is not divisible by 3
I do not need to do the calculation 14 107 ÷ 3 to show this.'

Write down how Eva shows that 14 107 is **not** divisible by 3

[1]

11 Safia draws a triangle with a base length of 8 cm.
She then draws an enlargement of the triangle using scale factor 3

(a) Find the base length of the enlarged triangle.

..... cm [1]

(b) Safia says, 'The two triangles I have drawn are congruent.'

Explain why Safia is **not** correct.

.....

..... [1]

12 The nth term of a sequence is $n - 7$

(a) Find the 18th term in this sequence.

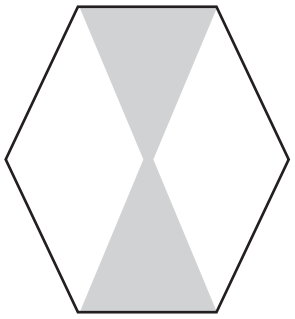
..... [1]

(b) Draw a ring around the number that is a term in this sequence.

−3 −20 −7 −8

[1]

13 Look at the diagram.



Describe **fully** the symmetry of this diagram.

.....

..... [2]

14 Draw a ring around the length of time that is different from the other three lengths of time.

7 hours 25 minutes 7.25 hours 445 minutes $7\frac{5}{12}$ hours

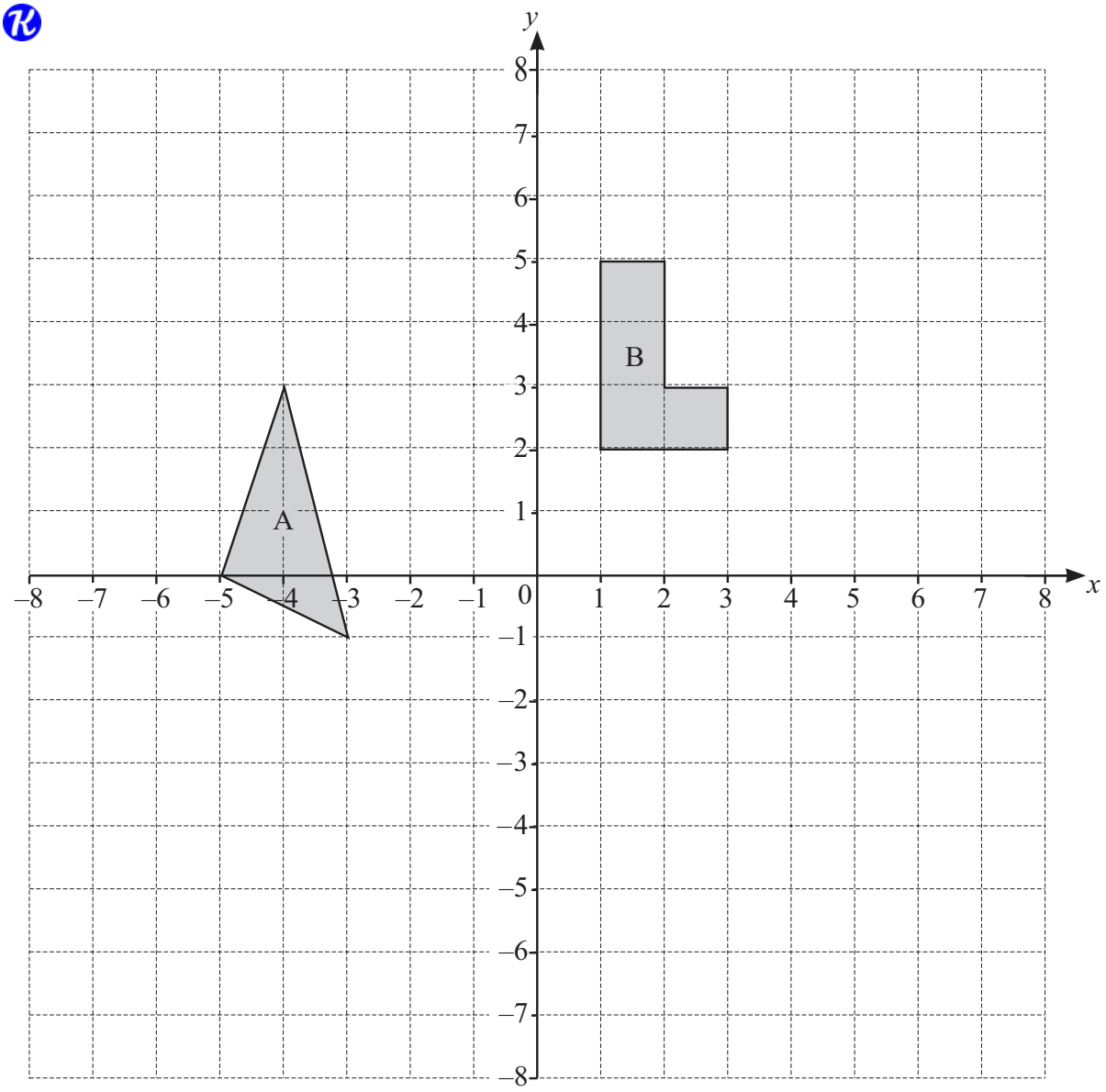
[1]

15 Point B has coordinates $(5, -6)$.
Point B is the image of point A after a translation of 3 to the left and 2 up.

Find the coordinates of point A.

$A = ($ ..... , ... $)$ [1]

16 Shape A and shape B are drawn on the coordinate grid.



(a) Reflect shape A in the x-axis. [1]

(b) Rotate shape B by 90° clockwise around the point (4, 2). [2]

17 Rajiv writes down a fraction equivalent to $\frac{2}{3}$

The numerator of the fraction is greater than 35 and less than 45
The denominator of the fraction is greater than 62

Write down **all** of the possible fractions that Rajiv could have written.

..... [2]

18 A book has a mass of 600 g.
A newspaper has a mass of 90 g.

Find the ratio

mass of book : mass of newspaper.

Give your ratio in its simplest form.

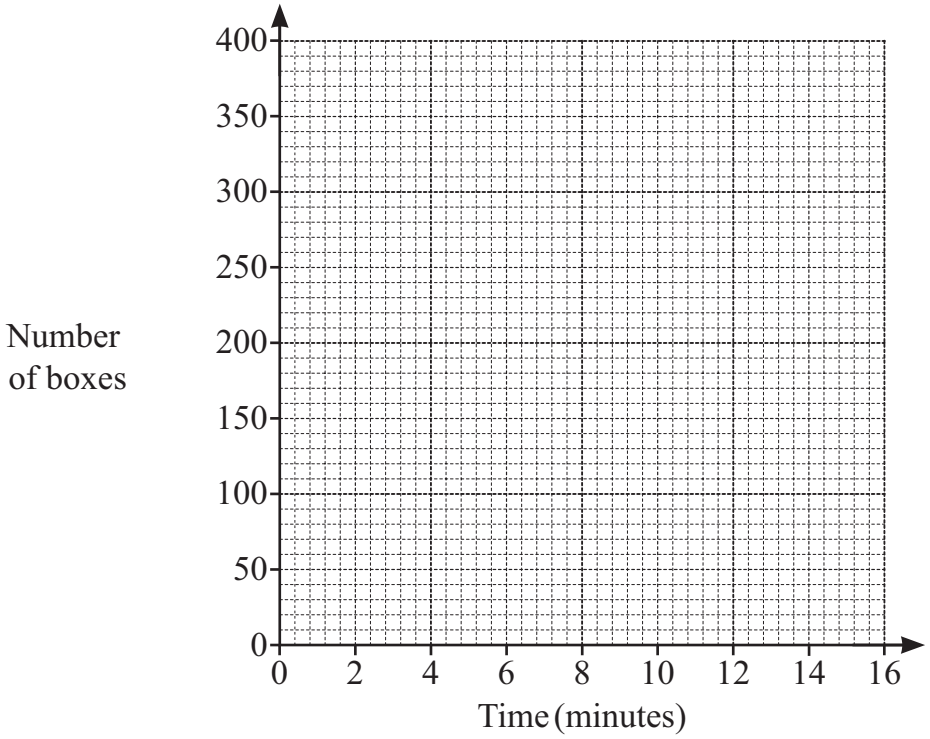
..... : ..... [1]

19 Write $\frac{5}{8}$ as a decimal.

..... [2]

20 A machine makes 90 boxes every 4 minutes.

Draw a straight-line graph to show how the number of boxes varies with the time between 0 and 16 minutes.



[2]

21 Hassan has a roll of cloth 4.7 m long.

He cuts 4 pieces from this roll, each with a length of 0.32 m.

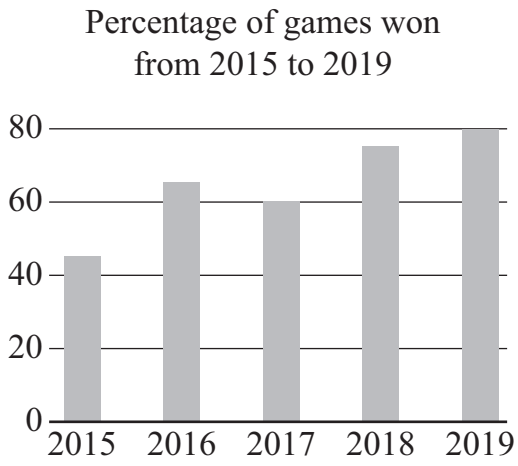
Work out the length of cloth left on the roll.

..... m [2]

22 Carlos is a tennis player.

The infographic gives some information about his fans and games.

In 2019, 7 out of 10 fans are female and 3 out of 10 fans are male.



(a) In 2017, Carlos played 300 games.

Work out the number of games he won in 2017

..... [2]

(b) In 2019, Carlos had 14 000 female fans.

Work out the **total** number of fans he had in 2019

..... [2]

23 Work out.

$$4\frac{2}{3} + 2\frac{3}{4}$$

Give your answer as a mixed number in its simplest form.

..... [3]

24 Point P has coordinates $(a\ ,\ 5)$.
Point Q has coordinates $(3a + 2\ ,\ 5)$.
The length of the line PQ is 18 units **and** $a > 0$

Find the value of a.

$a =$ ..... [2]

25 $M \times \frac{5}{8} = \frac{15}{28}$

Find the value of M.
Give your answer as a fraction in its simplest form.

$M =$ ..... [2]

26 Work out.

$$2.73 \times 20 \times 0.2 - 0.73 \times 40 \times 0.1$$

..... [2]

27 Yuri has a full bottle of juice.

On Monday he drinks $\frac{1}{4}$ of the full bottle.

On Tuesday he drinks 35% of the full bottle.

On Wednesday he has 360 m*l* of juice left in the bottle.

Work out the volume of juice in the full bottle.

..... m*l* [3]