Cambridge Assessment International Education

Mathematics

Stage 7

Paper 1 **2024**

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.

$7 - (-4)$

..... [1]

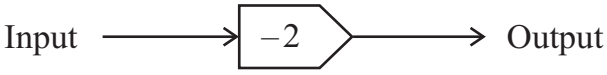
2 **(a)** Write 0.7 as a percentage.

..... % [1]

(b) Write $\frac{7}{50}$ as a decimal.

..... [1]

3 Here is a function machine.



(a) Find the **output** when the input is 15

..... [1]

(b) Find the **input** when the output is 40

..... [1]

4 Work out.

$21 - 6 + 5$

.....

$5 + 6^2$

.....

[2]

5 Mike has some number cards.

6	7	3	8	2	1

He chooses one of the cards at random.

(a) Write these outcomes in order, starting with the least likely.

Chooses an odd number Chooses the number 8 Chooses the number 5

....

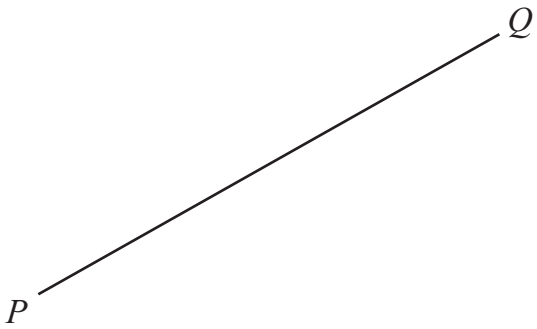
Least likely Most likely

[1]

(b) Find the probability that Mike chooses a number greater than 6

..... [1]

6 Draw a line that is parallel to the line PQ.



[1]

7 Safia wants to show the proportion of her time she spends in different lessons during a week at school.

Draw a ring around the most appropriate diagram she could use to display this information.

line graph scatter graph Venn diagram pie chart

[1]

8 Draw a ring around the **three** values that are equivalent to each other.

$\frac{2}{5}$ $\frac{4}{100}$ 0.04 20% 4% 0.25

[1]

9 **(a)** Here are the second, third and fourth terms in a linear sequence.

… 1 –4 –9 …

(i) Write down the first and fifth terms in the sequence.

.... [2]

first term fifth term

(ii) Describe the term-to-term rule for the sequence.

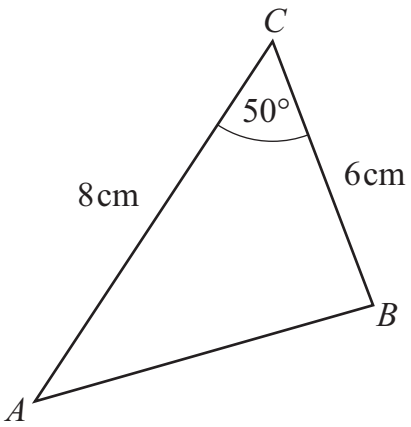
..... [1]

(b) The nth term of a different sequence is $7n$.

Find the 9th term in this sequence.

..... [1]

10 The diagram shows triangle ABC.



NOT TO SCALE

Triangle ABC is enlarged by scale factor 3

After this enlargement, find

(a) the length of AC,

..... cm [1]

(b) the size of angle ACB.

..... ° [1]

11 **(a)** Complete this sentence by writing the three correct values.

A square-based pyramid has ..... edges,

..... faces and ..... vertices.

[2]

(b) A 3D shape has one curved surface, no vertices and no edges.

Write down the name of this shape.

..... [1]

12 **(a)** Work out.

$$\frac{1}{7} \times \frac{2}{3}$$

..... [1]

(b) Work out.

$$\frac{2}{5} \div \frac{24}{25}$$

Give your answer in its simplest form.

..... [2]

13 Yuri calculates the value of 370×60

His answer is 222 000

Explain why Yuri is wrong.

.....

..... [1]

14 Draw a ring around the pair of numbers that have exactly two common factors.

4 and 16 10 and 19 45 and 60 4 and 22

[1]

15 Point A has coordinates $(-2, 3)$.

Point B is the image of point A after a translation of 5 to the left and 7 down.

Find the coordinates of point B.

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

16 Eva uses a divisibility test to show that 154 is not divisible by 3

Here is her working.

$1 + 5 + 4 = 10$

10 is not a multiple of 3

Therefore 154 is not divisible by 3

Use a divisibility test to show that 4158 is divisible by 6

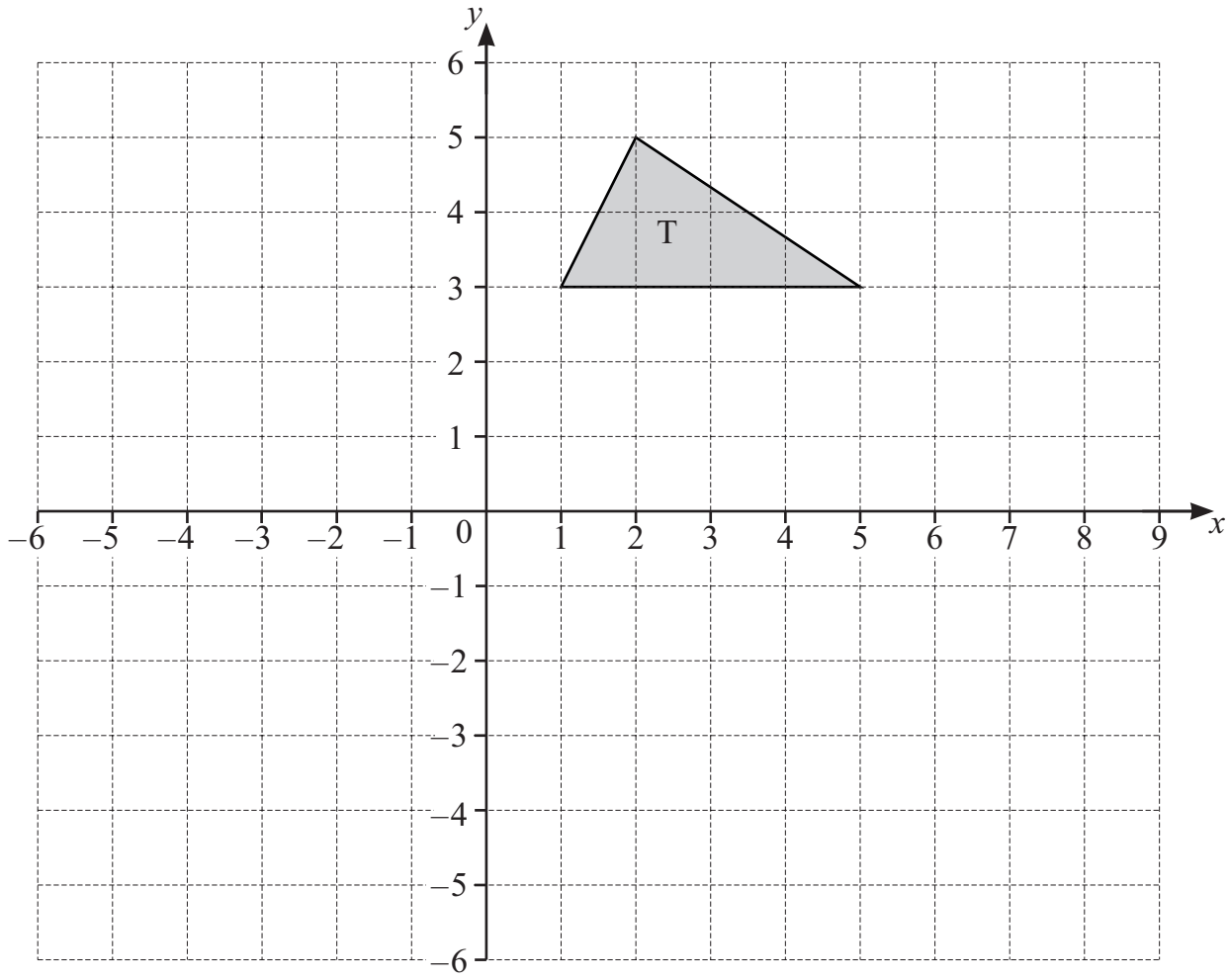
.....

.....

.....

..... [1]

17 The diagram shows triangle T on a coordinate grid.



(a) Reflect triangle T in the x–axis. [1]

(b) Rotate triangle T by 90° anticlockwise around the point (3, –1). [2]

18 **(a)** Write down the name of a quadrilateral with rotational symmetry of order 2

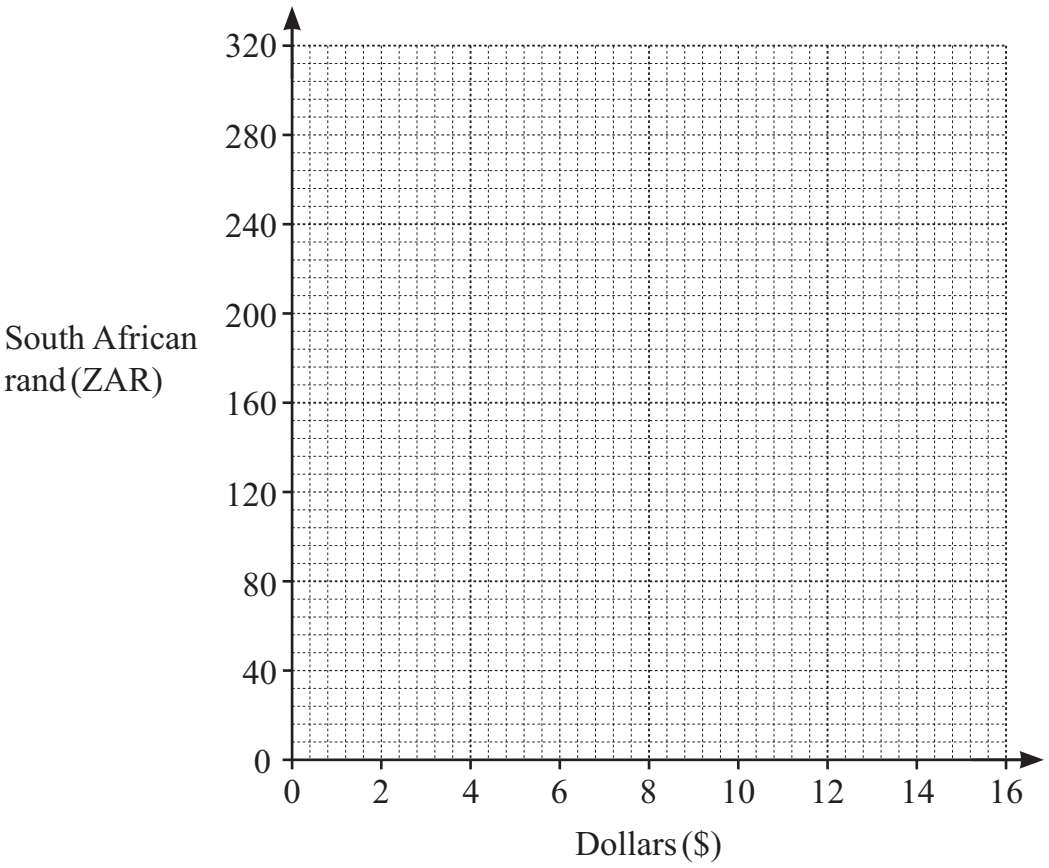
..... [1]

(b) Write down the name of a quadrilateral with exactly one line of symmetry.

..... [1]

19 The exchange rate between dollars ($) and South African rand (ZAR) is $1 = 16 ZAR.

(a) Draw a graph to convert dollars to South African rand.



[2]

(b) Write a formula to convert x dollars to y rand.

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

20 Pierre works out 14.56 divided by 14 using this method.

$14 \div 14 = 1$
$0.56 \div 14 = 0.4$

Answer = 1.4

He has made a mistake.

Write a number in each box to make Pierre's calculation correct.

$14 \div 14 = 1$

$0.56 \div 14 =$ ☐

Answer = ☐

[1]

21 In a car park there are 27 red cars and 43 blue cars.
These cars have either two doors or four doors.
12 of the red cars have two doors and 30 of the blue cars have four doors.

Represent this information in the two-way table.

[2]

22 Samira has 2.8 litres of lemonade.
She pours an equal amount of this lemonade into 5 cups.
She has 1.56 litres of lemonade remaining.

Work out the amount of lemonade in each cup.
Give your answer in litres.

.....*l* [3]

23 Mia, Oliver and Rajiv share some money and give the remainder of the money to charity.
Mia receives $\frac{1}{3}$ and Oliver receives $\frac{2}{5}$ of the money.
5% of the money is given to charity.

Work out the fraction of the money that Rajiv receives.

..... [3]

24 (**a**) Complete the statement by writing a decimal in the box.

$$482 \div 10^4 = \square \times 10$$

[1]

(**b**) Complete the statement by writing a fraction in the box.

$$4 \times \frac{7}{15} \times 10 = 20 \times \square$$

[1]

25 Jamila has a biased coin that can land on either heads or tails.
She wants to calculate an estimate of the probability that the coin lands on heads.

Describe an experiment Jamila could carry out with the coin.
As part of your answer, explain how she could use her results to calculate the probability that the coin lands on heads.

.....

.....

.....

..... [3]