Cambridge Assessment International Education

Mathematics

Stage 7

Paper 1 **2022**

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.

9×10^5

..... [1]

2 **(a)** Work out.

$80 - 7 \times 3^2$

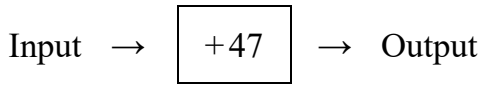
..... [1]

(b) Insert brackets to make the calculation correct.

$4 + 3^2 \times 5 - 1 = 40$

[1]

3 Here is a function machine.



(a) Find the output when the input is -9

..... [1]

(b) Find the input when the output is 32

..... [1]

4 Draw a ring around **each** number that is a common multiple of 3 **and** 4

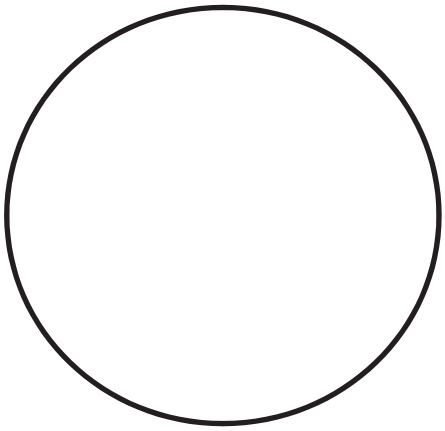
K

120 342 998 384

[1]

5 Here is a circle.

K



(a) Draw and label

(i) a chord, [1]

(ii) a tangent. [1]

(b) Complete the sentence using **two** words from the list.

centre radius chord tangent circumference

In a circle, the ..... is perpendicular to the .....
where they touch. [1]

6 Mia records the numbers of cars of different colours passing her school one morning.

K

Draw a ring around **each** of the representations that would be suitable to display this information.

bar chart scatter graph Venn diagram line graph pie chart

[1]

7 Point A has coordinates $(1, 5)$.

Point B is the image of point A after a translation 2 left and 3 down.

Write down the coordinates of point B.

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

8 Ahmed says, '29 is a cube number.'

Tick (✓) to show if he is correct.

Yes ☐ No ☐

Explain how you know.

.....

.....

[1]

9 The exchange rate between pounds (£) and dollars ($) is £4 = $5

Tick (✓) to show if each of these statements about pounds and dollars is true or false.

	True	**False**
£8 = $9	☐	☐
£16 = $20	☐	☐
£26 = $32.50	☐	☐

[1]

10 **(a)** Here are the first four terms in a sequence.

6, 1, −4, −9, …

(i) Write down the next **two** terms in the sequence.

..... , ... [1]

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

..... [1]

(b) The nth term of a different sequence is $6n$.

(i) Find the 8th term in this sequence.

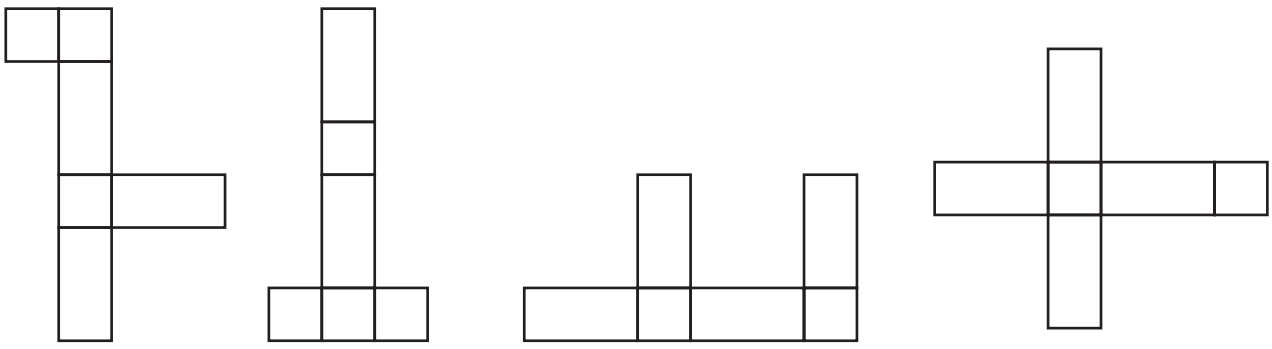
..... [1]

(ii) Draw a ring around the number that is a term in the sequence $6n$.

26 72 106 604

[1]

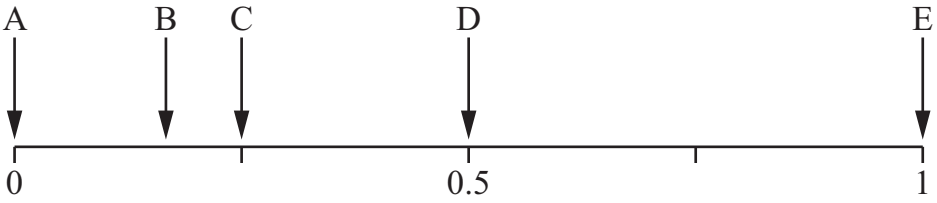
11 Draw a ring around the letter of the net that makes a cuboid.



A B C D

[1]

12 Chen has a fair 8-sided dice numbered 1 to 8
He rolls the dice once.
Look at the probability scale.



Write down the letter of the arrow that shows the probability he rolls

(a) an even number

..... [1]

(b) a multiple of 3

..... [1]

(c) the number 9

..... [1]

13 Write the name of a 3D shape that has two faces, one of which is curved.

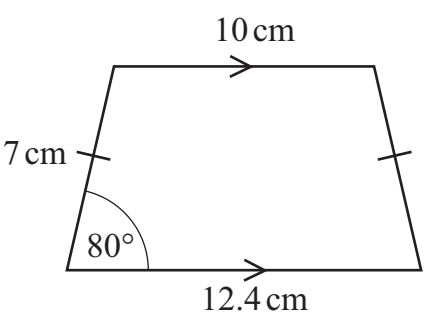
..... [1]

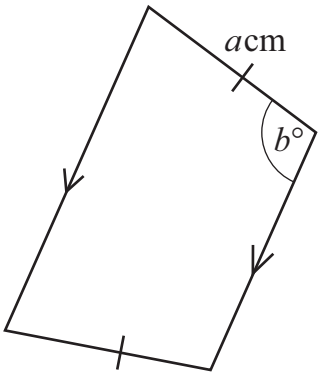
14 In the year 2000, a house was valued at $80 000
In 2020, the same house was valued at $280 000

Work out the value of the house in 2020 as a percentage of its value in 2000

..... % [2]

15 These two trapeziums are congruent.





NOT TO SCALE

Find the value of a and the value of b.

$a =$ .....

$b =$ .....

[2]

16 A map has a scale of 1 : 200 000
The distance between two towns on the map is 5.5 cm.

Find the actual distance between the two towns.
Give your answer in kilometres.

..... km [2]

17 **(a)** Write 167% as a mixed number.

..... [1]

(b) A model car is 12 cm long.
The actual car is 252 cm long.

Find the ratio

length of the model car : length of the actual car.

Give your ratio in its simplest form.

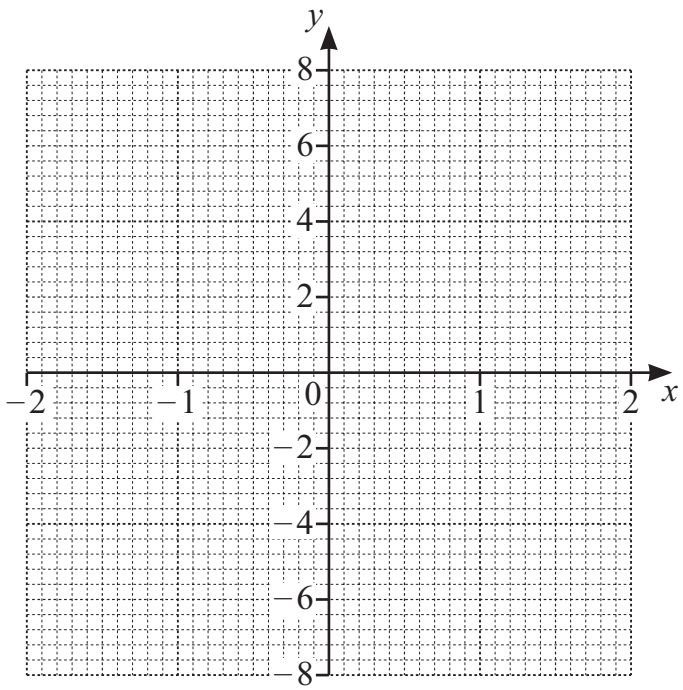
..... : ..... [1]

18 **(a)** Complete the table of values for the equation $y = 3x$

x	−2	−1	0	1	2
y		−3	0	3	

[1]

(b) On the grid, draw the graph of $y = 3x$



[2]

19 Look at the calculations in the box.

$4(1 + 5)$	$(3.5 + 2.5) \times 7$
$3.5 + 2.5 \times 7$	$28 \div (7 + 7)$
$4 \times 1 + 5$	$28 \div 7 + 7$

Draw a ring around **each** of the calculations with a result that is a factor of 48

[2]

20 Point P has coordinates $(k, -3)$.
Point Q has coordinates $(2, -3)$.
The length of PQ is 6.5 units **and** $k < 0$

Find the value of k.

$k =$ ..... [1]

21 Work out.

$$3\frac{3}{5} + 1\frac{2}{3}$$

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

..... [3]

22 $P \div \frac{5}{7} = \frac{3}{5}$

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

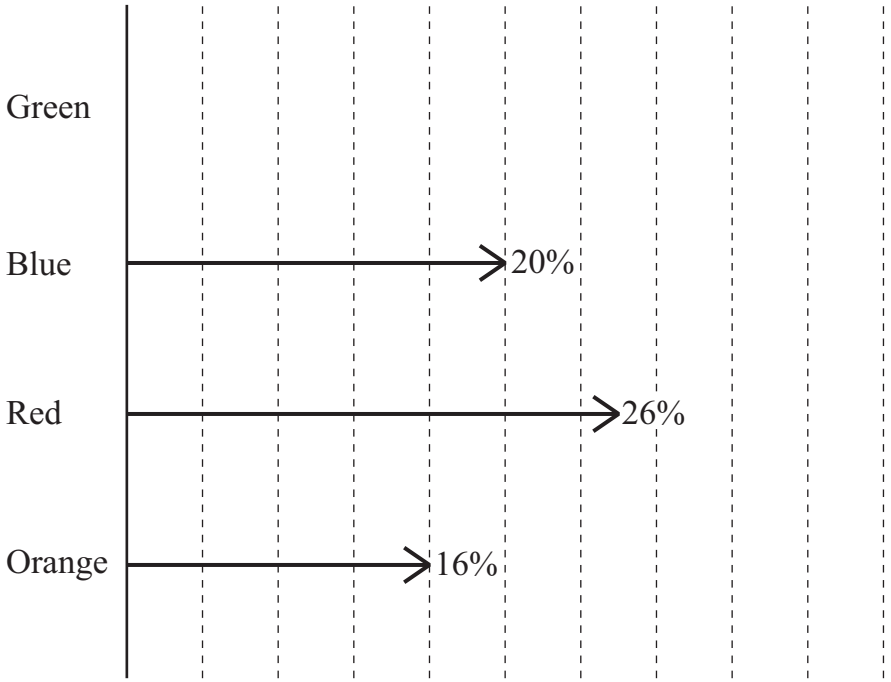
..... [2]

23 Work out.

$0.35 \times 6 \times 15 + 1.65 \times 3 \times 30$

..... [2]

24 50 people were asked which was their favourite colour.
The infographic shows some of this information.



(a) 6 of the 50 people stated that green was their favourite colour.

Complete the infographic for green. [2]

(b) Work out the number of people who did **not** have a favourite colour that was green, blue, red or orange.

..... [2]

25 Naomi travels to an interview.

She travels by car for $\frac{1}{3}$ of the journey.

She travels by train for $\frac{5}{8}$ of the journey.

She walks for the remaining 500 m of the journey.

Find the length of this journey in kilometres.

..... km [3]