Cambridge Assessment International Education

Cambridge Lower Secondary Progression Test

Mathematics paper 2

Stage 8

2540791638

55 minutes

For Teacher's Use	
Page	**Mark**
1	
2	
3	
4	
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10	
11	
12	
13	
14	
Total	

Name .....

Additional materials: Calculator
Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

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

Calculator 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 There are 12 adults, 24 girls and 6 boys in a room.

Work out the ratio of adults to girls to boys.
Write the answer in its simplest form.

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

2 A class of children go to an activity centre.

In the morning, each child chooses to do one of Swimming (S), Climbing (C) or Archery (A).
In the afternoon, each child chooses to do one of Tennis (T), Volleyball (V) or Football (F).

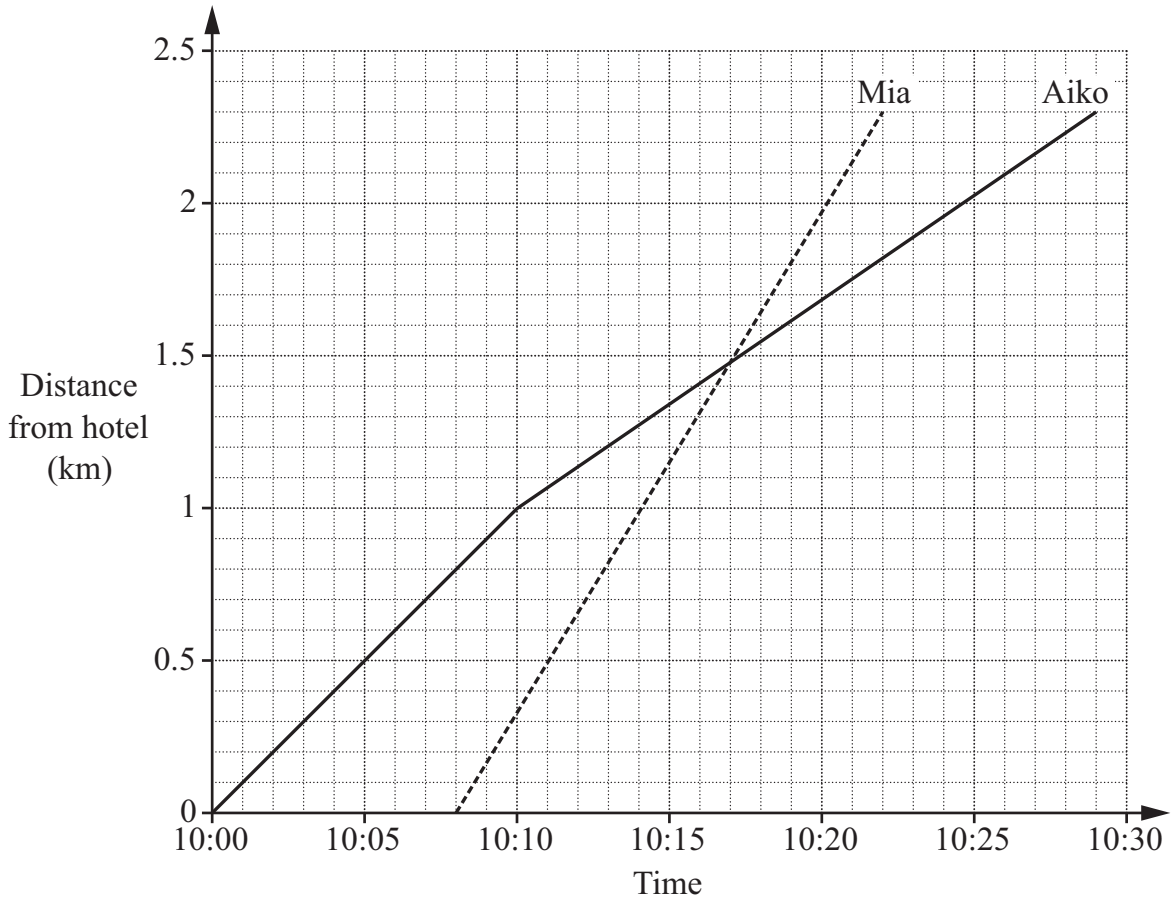
Complete the table to show all the possible combinations of activities.
Two rows have been completed for you.
You may not need all the rows.

Morning activity	Afternoon activity
S	T
S	V

[2]

3 Mia and Aiko travel from a hotel to the beach along the same path.
The graph shows information about their journeys.

For Teacher's Use



(a) Write down the time when Mia passes Aiko.

..... [1]

(b) Work out the difference between the number of minutes Mia and Aiko take to get to the beach.

..... minutes [2]

[Turn over

For Teacher's Use

4 Tickets for a theatre cost \$18 each.
There is a single postage cost of \$3 for any number of tickets bought.

(a) Write down a formula for the total cost in dollars (C) of t tickets.

$C =$ ..... [1]

(b) Jamila buys 8 tickets.

Use your formula to find the total cost.

\$ ..... [1]

5 Write a decimal in each box to make a correct statement.

(a) 11.375 < ☐ < 11.38

[1]

(b) 1 > ☐ > 0.99

[1]

6 Draw a ring around the largest fraction.

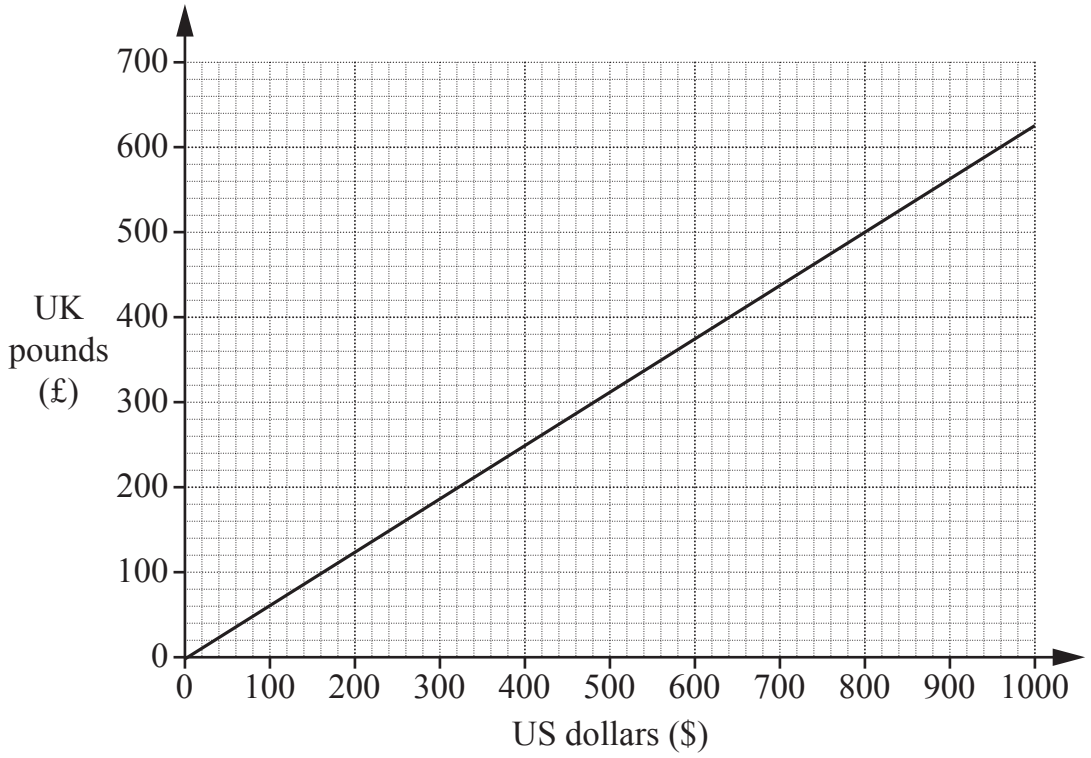
$\frac{5}{7}$ $\frac{7}{10}$ $\frac{10}{13}$

Show how you worked out your answer.

[2]

7 The graph is used to convert between US dollars ($) and UK pounds (£).

For Teacher's Use



Use the graph to convert

(a) £400 into dollars, $ ..... [1]

(b) $300 into pounds. £ ..... [1]

The conversion rate is the same for any amount of money.

(c) Find the number of dollars equivalent to £1000

$ ..... [1]

[Turn over

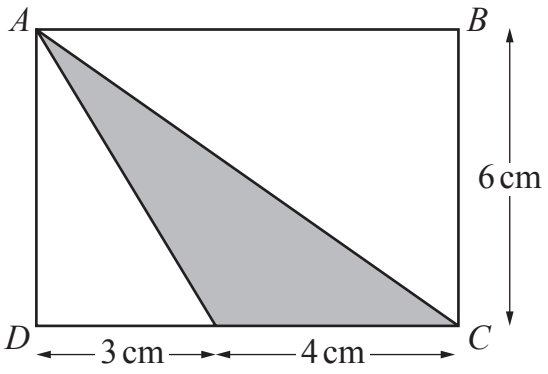
For Teacher's Use

8 The price of a train ticket is $14.50
The price rises by 8%.

Work out the new price of the ticket.

$ ..... [2]

9 *ABCD* is a rectangle.



NOT TO SCALE

Work out the area of the shaded triangle.

..... cm^2 [2]

10 Work out.

$(42.5 - 7 \times 6)^4$

..... [1]

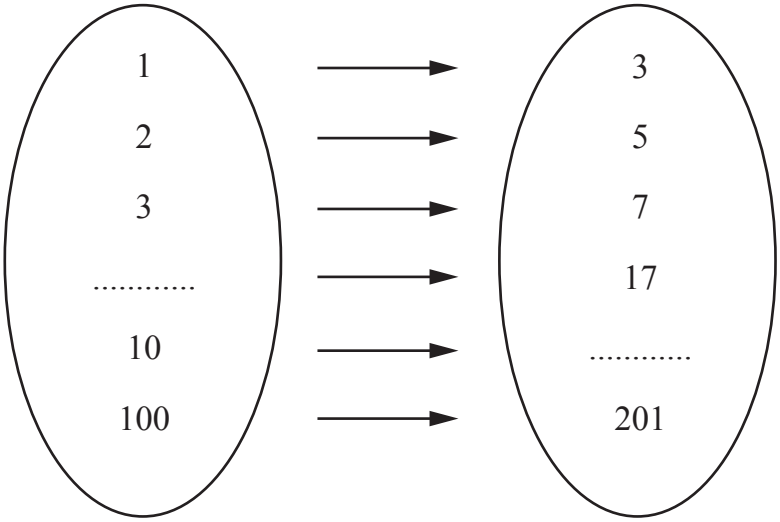
11 20 people take a quiz.
Here are their marks.

Mark	7	8	9	10
Frequency	6	2	4	8

Calculate the mean mark.

..... [2]

12 The diagram shows a mapping.



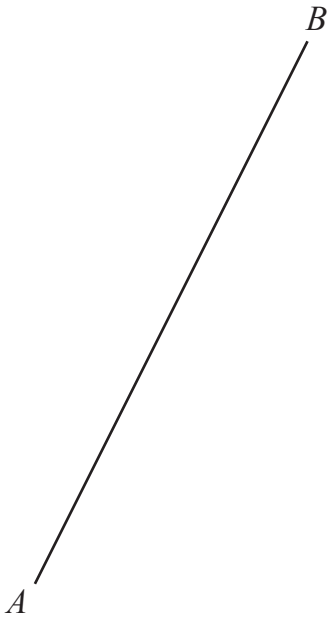
(a) Complete the diagram with the missing numbers. [2]

(b) Represent this mapping algebraically.

x ⟶ ..... [1]

13 Use a straight edge and compasses to construct the perpendicular bisector of AB. Show all your construction lines.

For Teacher's Use



[2]

For Teacher's Use

14 Lily owns a restaurant.
She changes the menu.
She records the number of customers using the restaurant for 15 days **after** the menu is changed.

Her results are shown in the stem-and-leaf diagram.

2	6 8 8 9
3	0 1 4 5 6
4	2 4 5 7
5	2 3

Key: 2 | 6 = 26 customers

(a) Write down the number of days when she recorded fewer than 30 customers.

..... [1]

(b) Write down the median number of customers.

..... [1]

(c) Work out the range.

..... [1]

(d) The median and range for the number of customers using the restaurant each day **before** the menu was changed are shown.

Median = 41
Range = 19

Lily thinks that more customers are using the restaurant **after** the menu was changed.

Tick (✓) a box to show if Lily is correct. Yes ☐ No ☐

Explain your answer.

.....

..... [1]

[Turn over

For Teacher's Use

15 The term-to-term rule for a sequence is

multiply by 3 and then subtract 7

The 3rd term of the sequence is 17

(a) Calculate the 4th term of the sequence.

..... [1]

(b) Calculate the 1st term of the sequence.

..... [2]

16 The diameter of a coin is 24 mm.

(a) Calculate the circumference of the coin.

..... mm [1]

(b) Calculate the area of one face of the coin.

..... mm^2 [1]

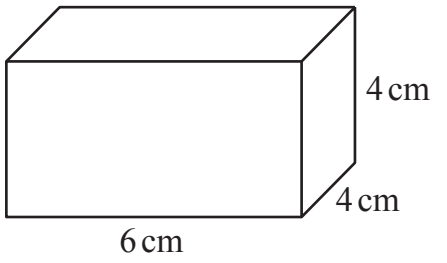
17 A recipe for biscuits for 4 people uses 140 g of flour.

Work out the amount of flour needed for biscuits for 9 people.

For Teacher's Use

..... g [1]

18 A cuboid measures 6 cm by 4 cm by 4 cm.



NOT TO SCALE

Work out the surface area of the cuboid.

..... cm^2 [2]

19 Use a ruler and compasses to construct an equilateral triangle with sides of length 6 cm.
One side has been drawn for you.
Leave in your construction lines.

[2]

20 A bag contains only green, red and blue beads.
Pierre takes a bead out of the bag at random.
The probability that the bead is green is double the probability that the bead is red.
The probability that the bead is blue is $\frac{1}{3}$

Complete the table to show the **smallest number of each bead** that could be in the bag.

Green	Red	Blue

[2]

21 Yuri finds these facts on a website.

For Teacher's Use

The diameter of the Earth is 12 760 kilometres.

The diameter of Venus is 7560 miles.

Tick (✓) a box to show which planet has the **larger** diameter.

Earth ☐

Venus ☐

Show how you worked out your answer.

[2]

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