![Cambridge Assessment International Education logo]

Cambridge Lower Secondary Progression Test

Mathematics paper 2

Stage 7

55 minutes

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	
Page	**Mark**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Total	

2

1 Here is a list of numbers.

6   10   19   25   35   40   48

From the list, write down

(a) a multiple of 12,

.... [1]

(b) a prime number,

.... [1]

(c) a square number.

.... [1]

2 A formula used in science is

$v = u + at$

Work out the value of v when $u = 7$, $a = 5$ and $t = 9$

$v =$ .... [2]
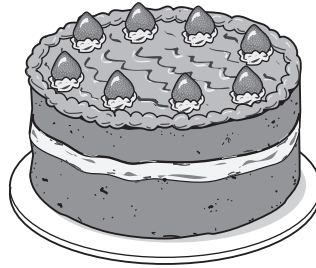
3 47 students go to a sports centre in buses.
A bus can hold 14 students.

Find the number of buses needed.
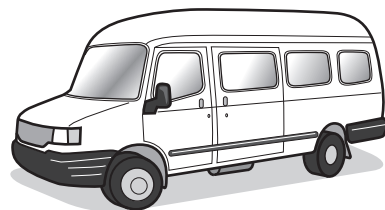
.... [1]

4 Six people estimate the mass of a cake in kilograms.

Name	Estimate (kg)
Oliver	0.75
Jamila	0.8
Anastasia	0.71
Hassan	0.385
Youssef	0.6
Blessy	0.799

(a) Write down the correct name to complete these statements.

.... gives the **smallest** estimate.

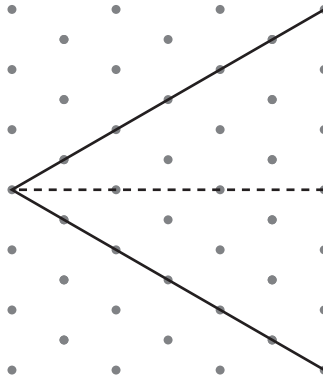... gives the **largest** estimate.

[1]

(b) The actual mass of the cake is 0.68 kg.

Write down the name of the person whose estimate is closest to the actual mass.

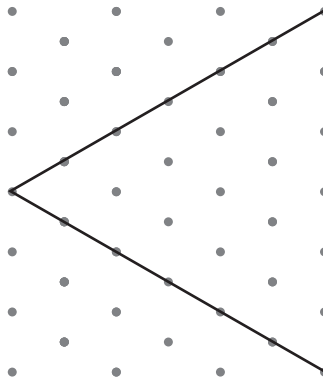... [1]

5 Here is an equilateral triangle drawn on an isometric grid.

By drawing one straight line through the triangle, it is possible to divide it into two right-angled triangles.
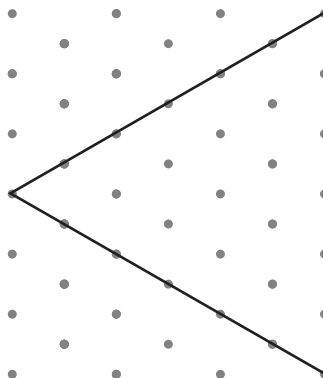

(a) Draw **one** straight line through the triangle below to divide it into a trapezium and an equilateral triangle.
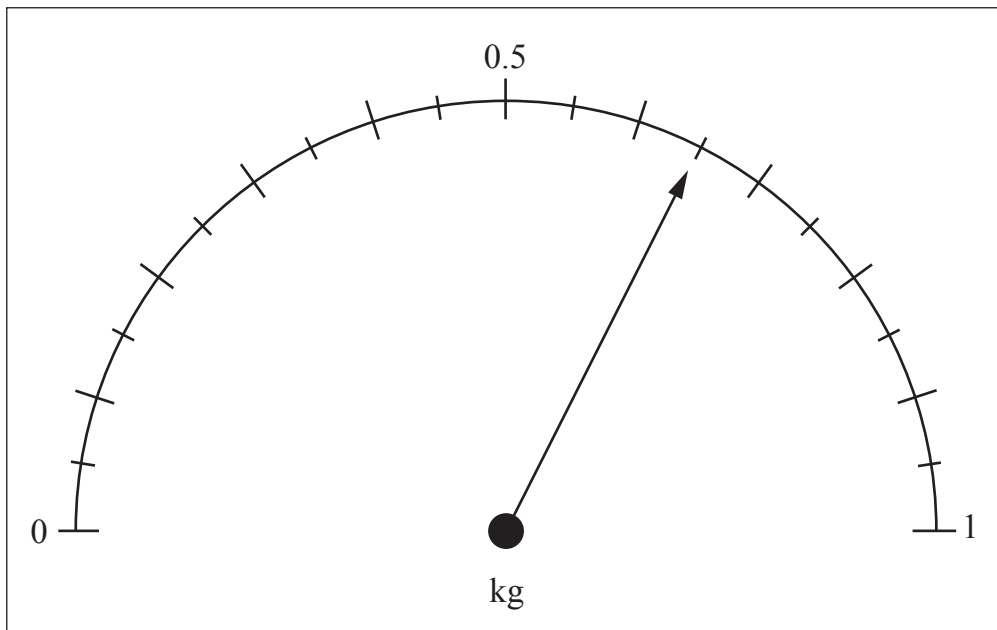

[1]

(b) Draw **two** straight lines through the triangle below to divide it into a rhombus and two equilateral triangles.

[1]

6 The scale shows measurements in **kilograms**.

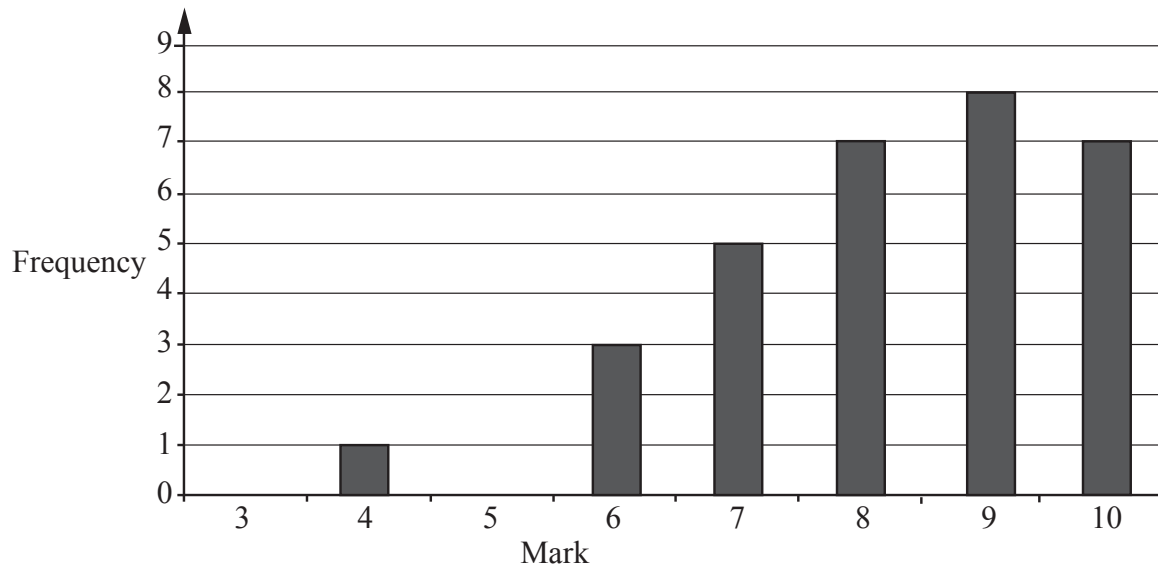Write down the measurement shown on the scale in **grams**.

.... grams [2]

7 Write down the name of the solid with the properties in the table.

Number of faces	Number of edges	Number of vertices
5	9	6

.... [1]

 [Turn over

6

8 Some students take a test.
Their marks are shown in the frequency diagram.

(a) Write down the range of marks.

.... [1]

(b) Find the total number of students who took the test.

.... [1]

(c) Find the median mark.

.... [1]

9 Complete the missing digits in this subtraction.

```
      ☐   2  .  3  3
   −  1   4  .  ☐  9
   ─────────────────
      2   7  .  9  ☐
```
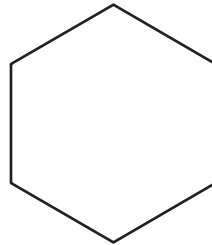
[2]

10 Find the order of rotational symmetry for each of these two-dimensional shapes.
The first one has been done for you.
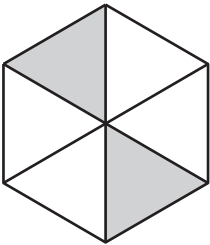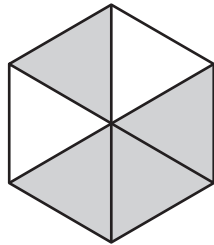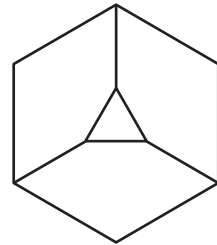

Order .....2.......   Order ....   Order ....   Order ....
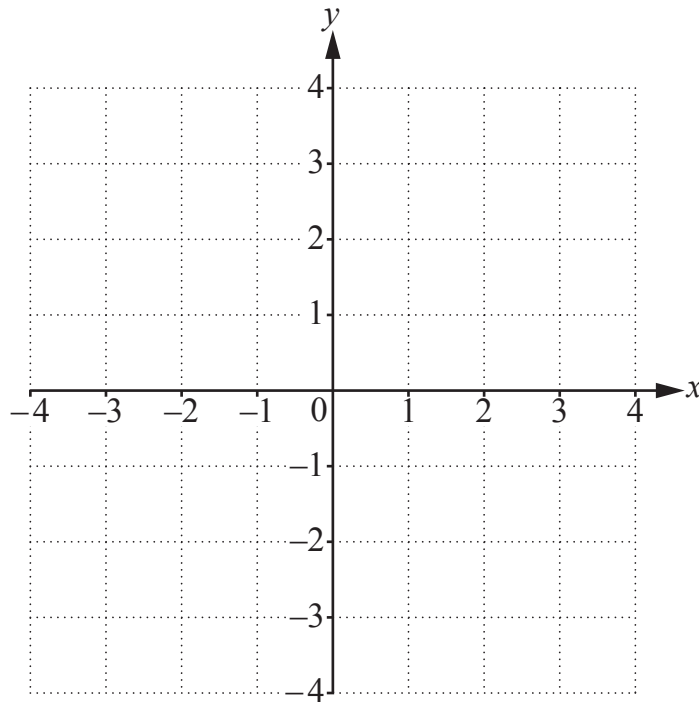
[2]

11 Carlos makes a fruit drink by mixing orange juice and grapefruit juice.
The ratio of orange juice to grapefruit juice is 3 : 1
He makes 10 litres of the fruit drink.

Work out how much orange juice he uses.

.... litres [2]
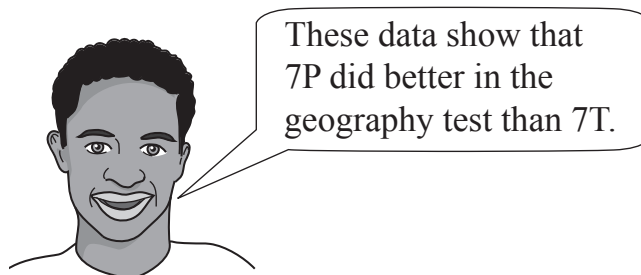
12 Draw the line $x = 2$ on the grid.

[1]

13 Two classes take the same geography test.
The mean and range for each class are shown in the table.

Class	Mean	Range
7P	56	27
7T	60	20

Pierre says,

These data show that 7P did better in the geography test than 7T.

Explain why Pierre is wrong.

....

.... [1]

14 The table shows some information about two train journeys.

Departure time (24-hour clock)	Arrival time (24-hour clock)	Length of train journey (hours and minutes)
08:45	13:15	.... hours .... minutes
....	06:05	8 hours 25 minutes

Complete the table.

[2]

15 Yuri wants to find out whether boys spend more time playing sports than girls. He decides to do a survey.

Tick (✓) the questions that are relevant for his survey.
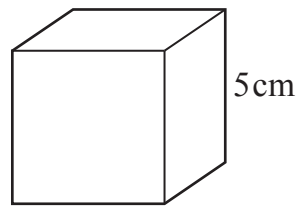
Are you a boy or a girl? ☐

How old are you? ☐

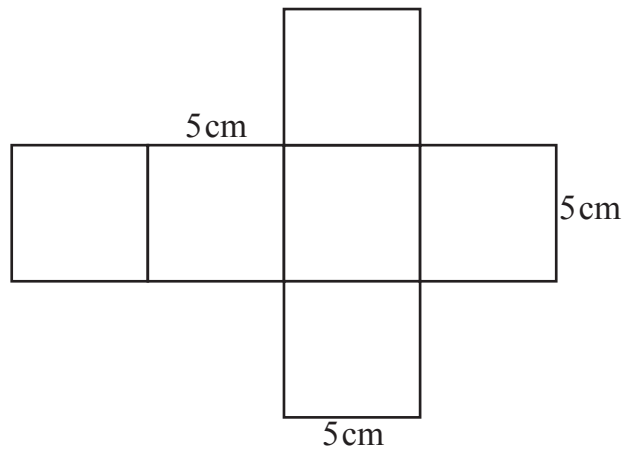How many hours did you play sports this week? ☐

Do you like football? ☐

[1]

16 Work out the surface area of this cube.

5cm

You may use this net to help you.

5 cm

5 cm

5 cm

.... cm² [2]

17 Rajiv draws a rectangle *ABCD*.
The coordinates of three of the vertices are *A* = (1, 1), *B* = (3, 1) and *C* = (3, 2).

Find the coordinates of *D*.

D = (.................. , ...) [1]

18 Aiko and Lily both think of a whole number.
Aiko's number is 2000 when rounded to the nearest 1000
Lily's number is 1900 when rounded to the nearest 100

Aiko says,

> My number must be
> larger than Lily's
> number.

Tick (✓) to show if Aiko is correct. ☐ Yes ☐ No

Explain your answer.

....

.... [1]

19 M = time in minutes.

Complete these sentences with the correct units.
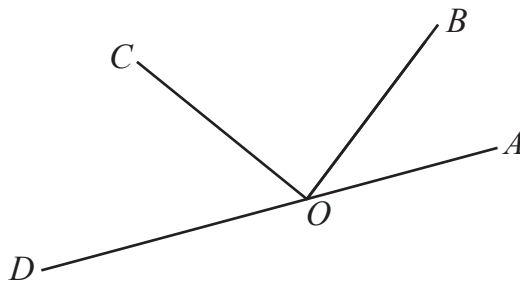The first one has been done for you.

$\dfrac{M}{60}$ gives time in ....hours...........

$\dfrac{M}{60 \times 24}$ gives time in ....

$\dfrac{M}{60 \times 24 \times 7}$ gives time in ....

[1]

20 This diagram shows three angles on line *AD*.

NOT TO SCALE

Angle *AOB* = 40°.
Angle *BOC* is a right angle.

Work out the size of angle *COD*.

Angle *COD* = ...° [1]

21 Ahmed has two fair six-sided dice.
One dice is red and the other is green.

The faces of the red dice are numbered 1, 2, 3, 4, 5, 6
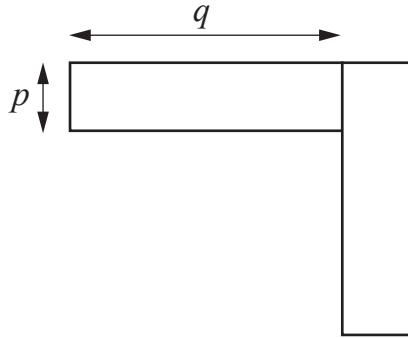The faces of the green dice are numbered 2, 3, 5, 6, 8, 8

Complete these sentences.

Ahmed is more likely to roll an even number on the .... dice.

It is impossible for Ahmed to roll a 1 on the .... dice.

[1]

22 The diagram shows two identical rectangles of length q and width p.
    All measurements are in centimetres.

NOT TO SCALE

Find an expression for the perimeter of the whole shape.

.... cm [1]

23 Here are 5 scores from a competition.

        3   4   5   2.5   6

Work out the mean score.

.... [2]

24 50 women out of 70 own a bicycle.
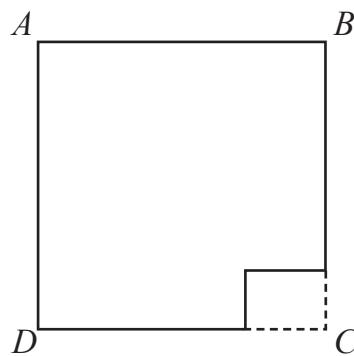110 men out of 150 own a bicycle.

Gabriella says,

> The percentage of women who own a bicycle is less than the percentage of men.

Show that Gabriella is correct.

[2]

25 *ABCD* is a square.
A rectangle is removed from corner *C*.
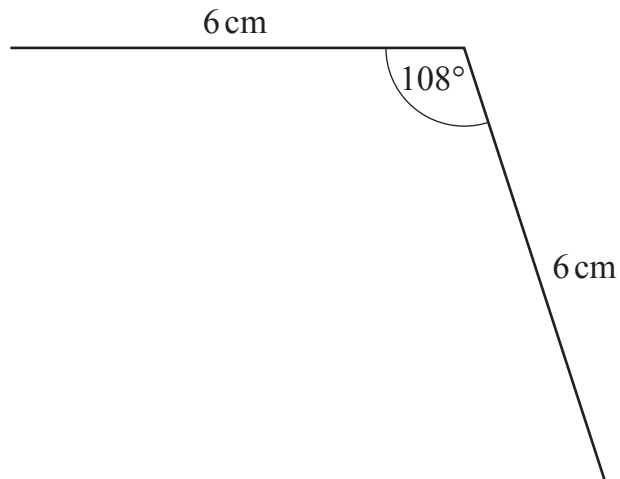

NOT TO
SCALE

The side of the square measures 2 metres.
The rectangle that has been removed measures 30 centimetres by 20 centimetres.

Work out the area of the shape that remains.
Give your answer in square metres.

.... m² [3]

26 The diagram shows two sides of a regular pentagon.

6 cm

108°

6 cm

Use a ruler and protractor to complete the pentagon accurately.

[2]

27 Find the difference between $\frac{7}{10}$ and $\frac{5}{8}$
Write your answer as a decimal.

.... [1]

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