Cambridge Assessment International Education

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MATHEMATICS **0580/11**

Paper 1 Non-calculator (Core) **October/November 2025**

1 hour 30 minutes

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **16** pages.

[Turn over

List of formulas

Area, A, of triangle, base b, height h.	$A = \frac{1}{2}bh$
Area, A, of circle of radius r.	$A = \pi r^2$
Circumference, C, of circle of radius r.	$C = 2\pi r$
Curved surface area, A, of cylinder of radius r, height h.	$A = 2\pi rh$
Curved surface area, A, of cone of radius r, sloping edge l.	$A = \pi rl$
Surface area, A, of sphere of radius r.	$A = 4\pi r^2$
Volume, V, of prism, cross-sectional area A, length l.	$V = Al$
Volume, V, of pyramid, base area A, height h.	$V = \frac{1}{3}Ah$
Volume, V, of cylinder of radius r, height h.	$V = \pi r^2 h$
Volume, V, of cone of radius r, height h.	$V = \frac{1}{3}\pi r^2 h$
Volume, V, of sphere of radius r.	$V = \frac{4}{3}\pi r^3$

Calculators must **not** be used in this paper.

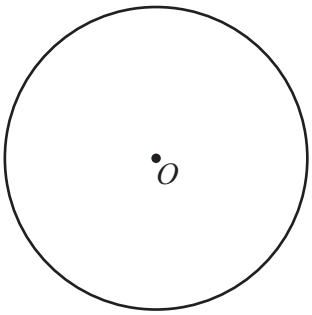
1 **(a)** Write the number four hundred and sixty thousand and five in figures.

..... [1]

(b) Write 52 149 correct to the nearest hundred.

..... [1]

2

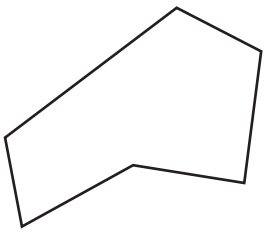


The diagram shows a circle, centre O.
On the diagram

(a) draw a diameter [1]

(b) mark a point on the circumference and label it C. [1]

3



Write down the mathematical name of this polygon.

..... [1]

4 **(a)** Write down all the factors of 24.

..... [2]

(b) Write down the reciprocal of $\frac{3}{7}$.

..... [1]

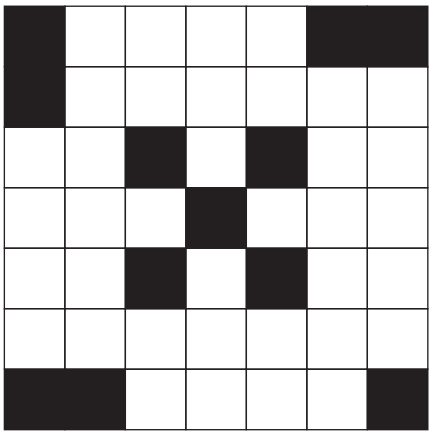
5 In triangle ABC, $AB = 8$ cm and $BC = 6.4$ cm.

Using a ruler and compasses only, construct triangle ABC.
Leave in your construction arcs.
The line AC has been drawn for you.

A ——————————————— C

[2]

6 Shade **one** square so that the diagram has rotational symmetry of order 4.



[1]

7 These are the first four terms of a sequence.

9 5 1 −3

(a) Find the next term.

..... [1]

(b) Explain how you worked out your answer.

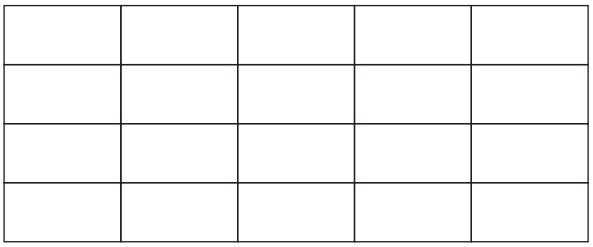
..... [1]

8 $p = 3q - 2r$

Work out the value of q when $p = 50$ and $r = 5$.

$q =$ ..... [2]

9 **(a)** Shade $\frac{3}{4}$ of this grid.

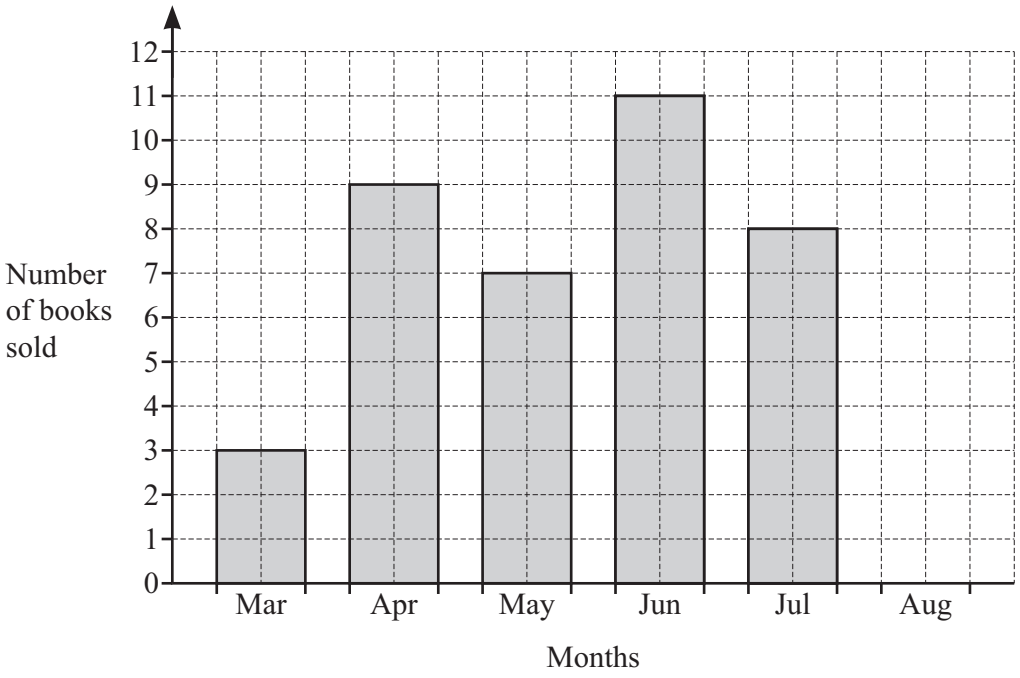


[1]

(b) Work out 15% of 80.

..... [2]

10 The bar chart shows the number of books sold in a shop in each of five months.



(a) 4 books were sold in August.

Complete the bar chart. [1]

(b) Calculate the mean number of books sold in the six months.

..... [2]

11 The temperature at midnight is −2 °C.
The temperature at noon is 5 °C.

(a) Find the difference between these temperatures.

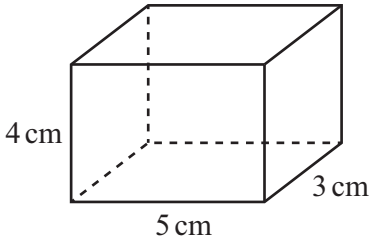
..... °C [1]

(b) The temperature at 9 am is 8 °C higher than the temperature at midnight.

Work out the temperature at 9 am.

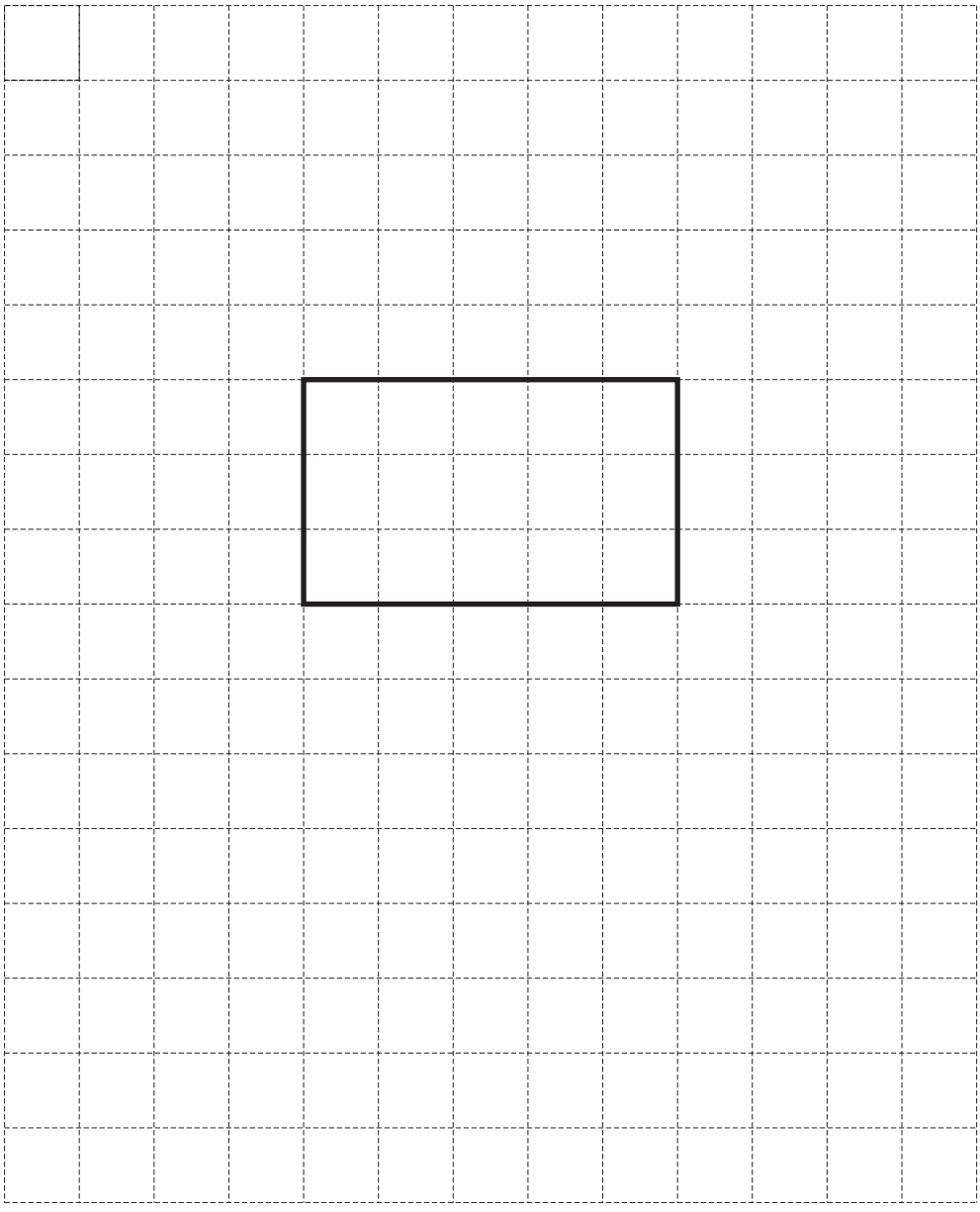
..... °C [1]

12



NOT TO SCALE

Complete the net of this cuboid on the 1 cm^2 grid.
One face has been drawn for you.



[3]

13 The scale drawing shows the positions of town *A* and town *B*.
The scale is 1 centimetre represents 10 kilometres.

Scale: 1 cm to 10 km

(a) Work out the actual distance from town *A* to town *B*.

..... km [2]

(b) Measure the bearing of town *B* from town *A*.

..... [1]

(c) Town *C* is 45 km from town *A* on a bearing of 310°.

On the scale drawing, mark the position of town *C*. [2]

14 These are the ages, in **months**, of each of 12 children.

11	27	8	10	26	17	28	12	9	13	22	12

(a) Complete the stem-and-leaf diagram to show this information.

0	
1	
2	

Key: 1 | 7 represents 17 months [2]

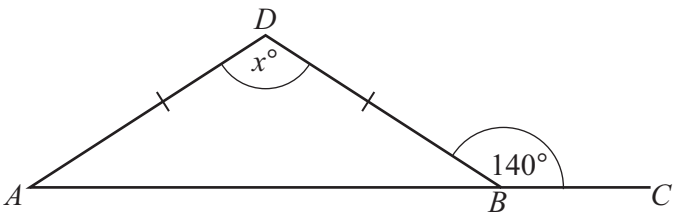
(b) Find the number of children over 2 **years** old.

..... [1]

(c) Show that the median is 12.5 .

[1]

15



NOT TO SCALE

ABC is a straight line and *ABD* is an isosceles triangle.

Work out the value of x.

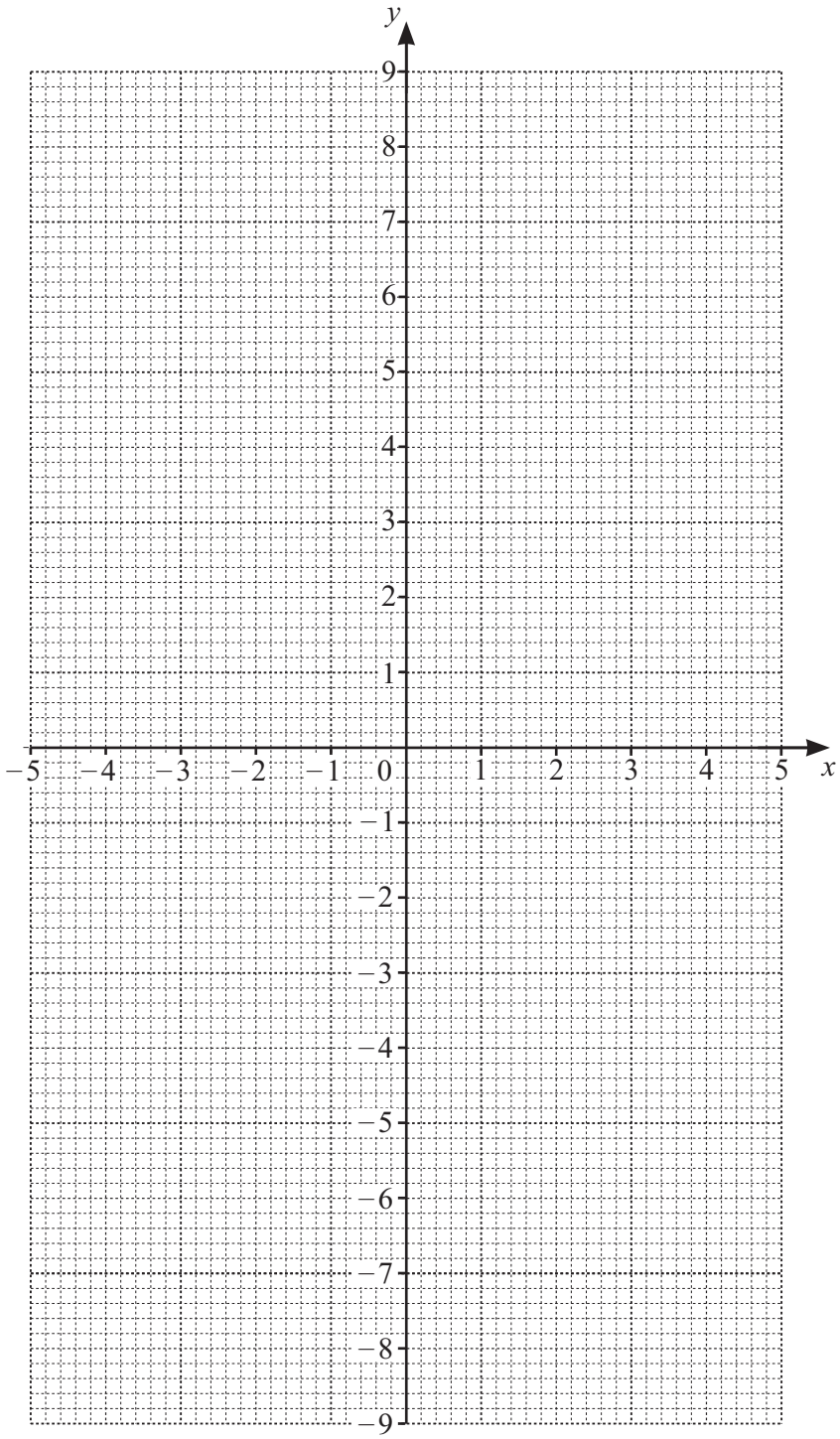
$x =$ ..... [3]

16 **(a)** Complete the table of values for $y = \frac{9}{x}$.

x	–4.5	–3	–2	–1.5	–1		1	1.5	2	3	4.5
y	–2	–3		–6	–9		9	6	4.5		2

[2]

(b) On the grid, draw the graph of $y = \frac{9}{x}$ for $-4.5 \leqslant x \leqslant -1$ and $1 \leqslant x \leqslant 4.5$.



[4]

17 **(a)** Write down a prime number between 20 and 30.

..... [1]

(b) Simplify $\left(\sqrt{9}\right)^2$.

..... [1]

18 Work out $\frac{11}{18} - \frac{2}{9}$.

Give your answer as a fraction in its simplest form.

..... [2]

19 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of

$$\frac{5.3 \times 19.5}{2.49}.$$

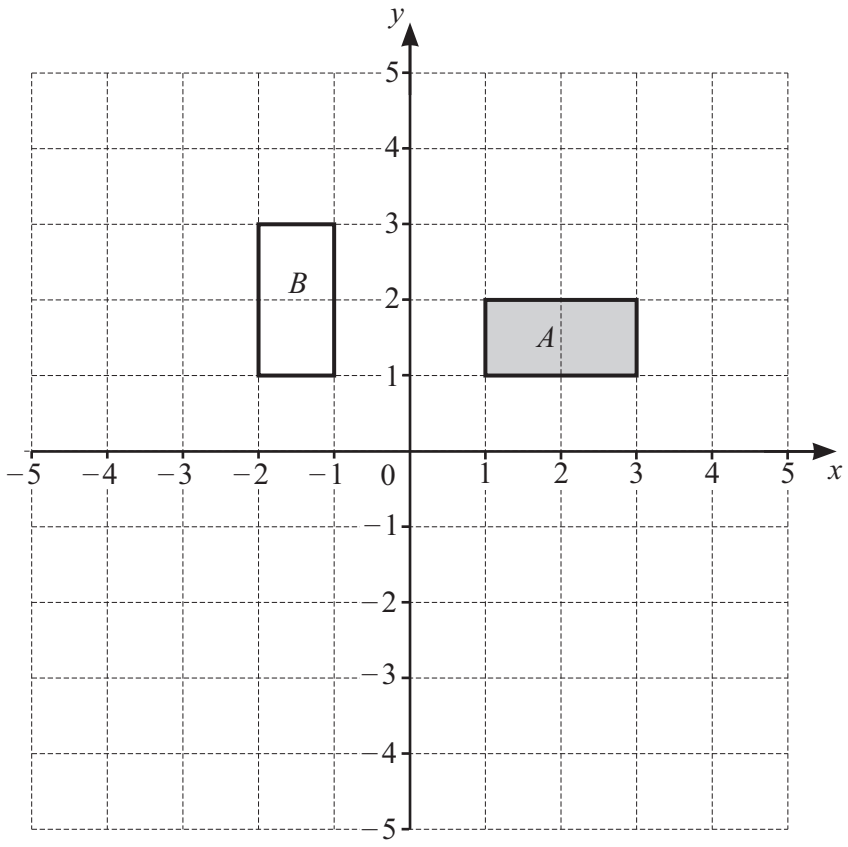
..... [2]

20 Some students take a test.
75 of the students pass the test.
This is $\frac{3}{5}$ of the students who take the test.

Work out how many students take the test.

..... [2]

21 Shapes A and B are shown on the grid.



(a) Describe fully the **single** transformation that maps shape A onto shape B.

.....

..... [3]

(b) Draw the image of shape A after a reflection in the line $y = -1$. [2]

22

Chocolate cookies Makes 12 100 g flour 55 g butter 55 g sugar 20 g cocoa 1 egg

(a) Sunita makes 24 chocolate cookies.

Work out how much flour she needs.

..... g [1]

(b) Albie has 28 g of cocoa.

Does he have enough cocoa to make 18 cookies?
Explain how you decide.

.....

..... [2]

23 **(a)** $a^8 \times a^x = a^{15}$

Find the value of x.

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

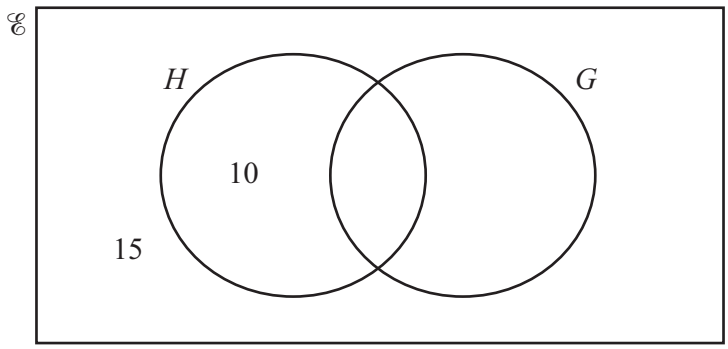
(b) $(b^7)^y = b^{21}$

Find the value of y.

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

24 $\mathscr{E}$ = {students in a year group}
H = {students who study History}
G = {students who study Geography}

80 students are in the year group.
40 students study History.



(a) Complete the Venn diagram. [2]

(b) Find n(G).

..... [1]

(c) A student is chosen at random.

Work out the probability that the student does not study History and does not study Geography.

..... [1]

25 Expand and simplify.

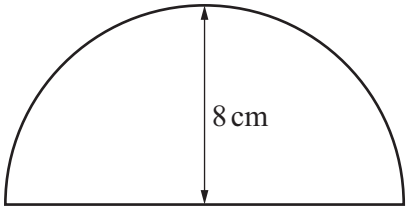
$$(x+3)(x-2)$$

..... [2]

26 Write 1.753×10^8 as an ordinary number.

..... [1]

27



NOT TO SCALE

The diagram shows a semicircle.
The radius of the semicircle is 8 cm.

Find the perimeter of the semicircle.
Give your answer in terms of π in its simplest form.

..... cm [3]

28 Work out $8\frac{2}{3} \div 1\frac{5}{8}$.

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

..... [3]

Question 29 is printed on the next page.

29 Jim buys 15 apples and 10 pears for $42.50 .
Li buys 4 apples and 5 pears for $16.

Write down a pair of simultaneous equations and solve them to find the cost of one apple and the cost of one pear.

Apple $ .....

Pear $ .....
[5]