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MATHEMATICS **0580/12**

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. Any blank pages are indicated.

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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.	$V = \frac{4}{3}\pi r^3$

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

1 Write down the value of the 3 in the number 23 679.

..... [1]

2 Tom buys 2 books costing $8.20 each.

Work out how much change he receives from $20.

$ ..... [2]

3 **(a)** Write 17 469 correct to the nearest ten.

..... [1]

(b) Write 5.073 correct to 1 decimal place.

..... [1]

4 **(a)** Write down the value of $\sqrt{144}$.

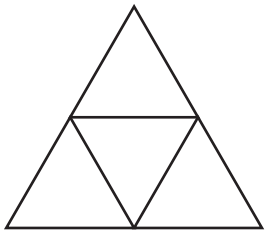
..... [1]

(b) Work out the value of 5^3.

..... [1]

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5 The diagram is made from equilateral triangles.



(a) On the diagram, draw all the lines of symmetry. [2]

(b) Write down the order of rotational symmetry.

..... [1]

6 **(a)** Write $\frac{3}{4}$ as a decimal.

..... [1]

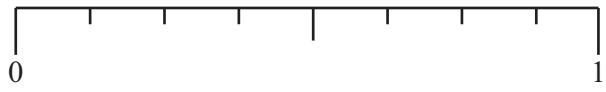
(b) Write $\frac{9}{100}$ as a percentage.

.....% [1]

(c) Write 143% as a decimal.

..... [1]

7 A bag contains 8 discs numbered 1 to 8.
A disc is picked at random from the bag.



On the probability scale, draw an arrow (↓) to show the probability that the number is

(a) an even number, label the arrow A [1]

(b) 9, label the arrow B [1]

(c) less than 3, label the arrow C. [1]

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8 A number, n, is a factor of 144 and a multiple of 9.

Find all the values for n.

..... [3]

9 The temperature at midday on Monday is –3 °C.
The temperature at 10 pm on Monday is –15 °C.

(a) Calculate the difference between these two temperatures.

..... °C [1]

(b) The temperature at midday on Tuesday is 23 °C higher than the temperature at 10 pm on Monday.

Calculate the temperature at midday on Tuesday.

..... °C [1]

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10 A bag contains red balls and green balls.
They are in the ratio red balls : green balls = 2 : 3.
A ball is picked at random.

Find the probability that it is a red ball.

..... [1]

11 The stem-and-leaf diagram shows the number of customers entering a shop each day for 20 days.

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

Key : 3 | 0 represents 30 customers

(a) Find the range.

..... [1]

(b) Find the mode.

..... [1]

(c) Work out the percentage of these 20 days when more than 55 customers enter the shop.

..... % [2]

(d) (i) Find the median.

..... [1]

(ii) On the next day 48 customers enter the shop.

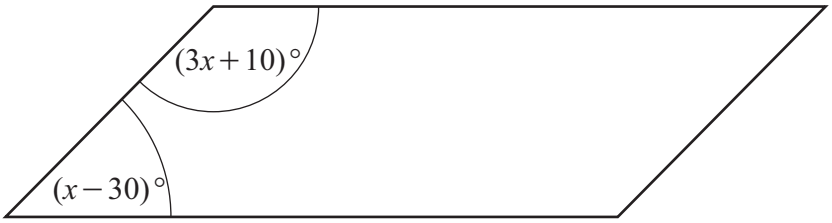
Will the median increase or decrease?
Give a reason for your answer.

..... because .....

..... [1]

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12 The diagram shows a parallelogram.



NOT TO SCALE

(a) Use the information in the diagram to write an equation and solve it to find the value of x.

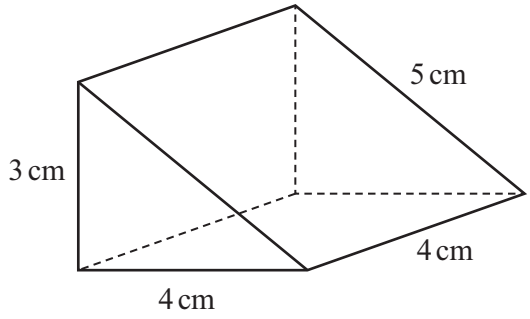
$x =$ ..... [4]

(b) Find the value of the largest angle in this parallelogram.

..... [1]

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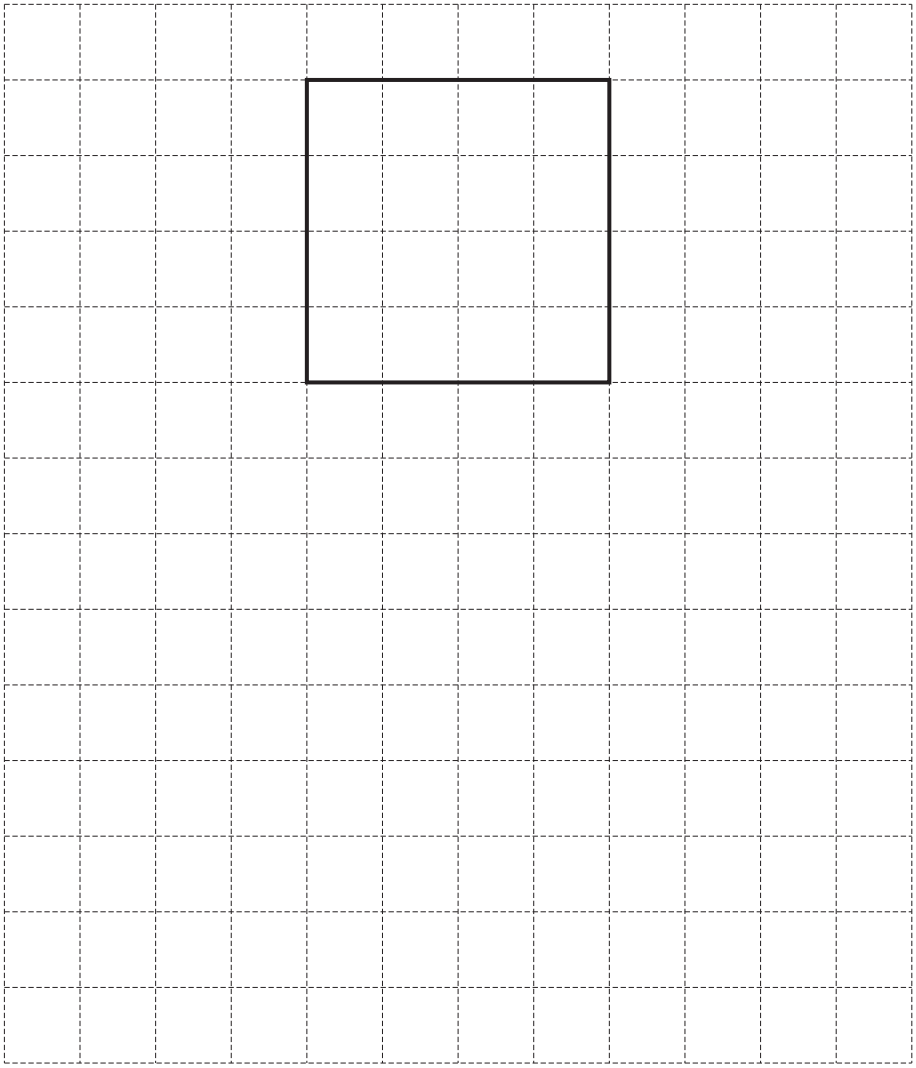
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NOT TO SCALE

The diagram shows a right-angled triangular prism.

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

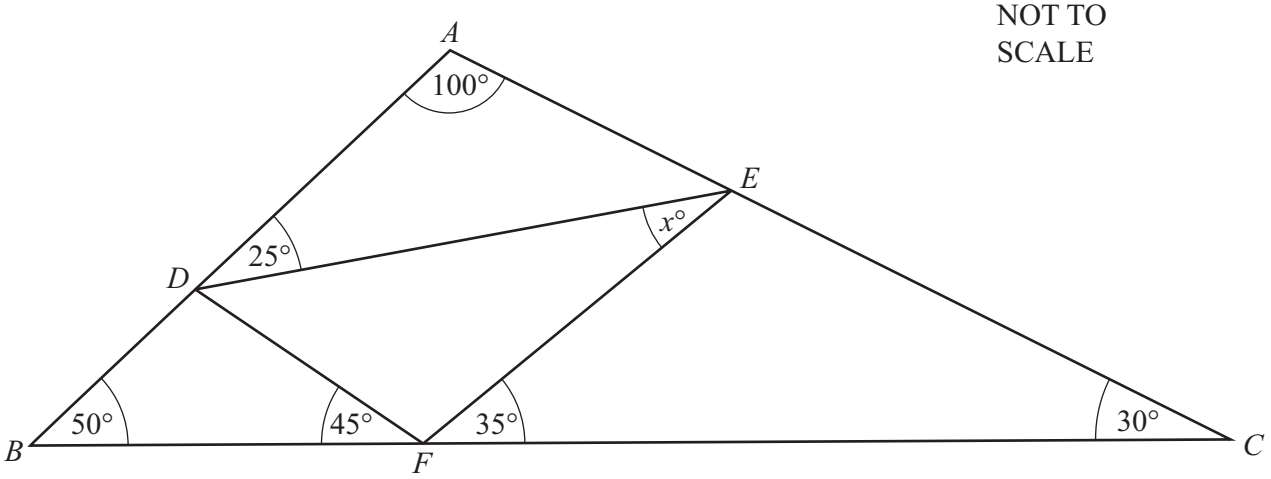


[3]

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14 The diagram shows a smaller triangle *DEF* which has vertices on the sides of a larger triangle *ABC*.

NOT TO SCALE



Find the value of x.

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

15 Three sisters share \$$n$ in the ratio 10 : 3 : 2.
The smallest share is \$120.

Find the value of n.

$n =$ ..... [3]

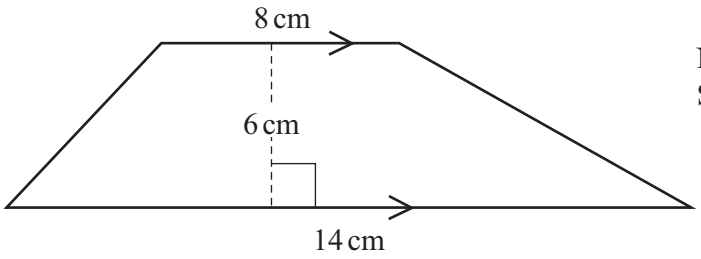
16 9.857×10^{-2} 3.5×10^{2} 1.54×10^{1} 6.5×10^{-2}

Write these numbers in order, starting with the smallest.

..... < ..... < ..... < ..... [2]
smallest

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NOT TO SCALE

Calculate the area of this trapezium.

..... cm^2 [2]

18 Work out.

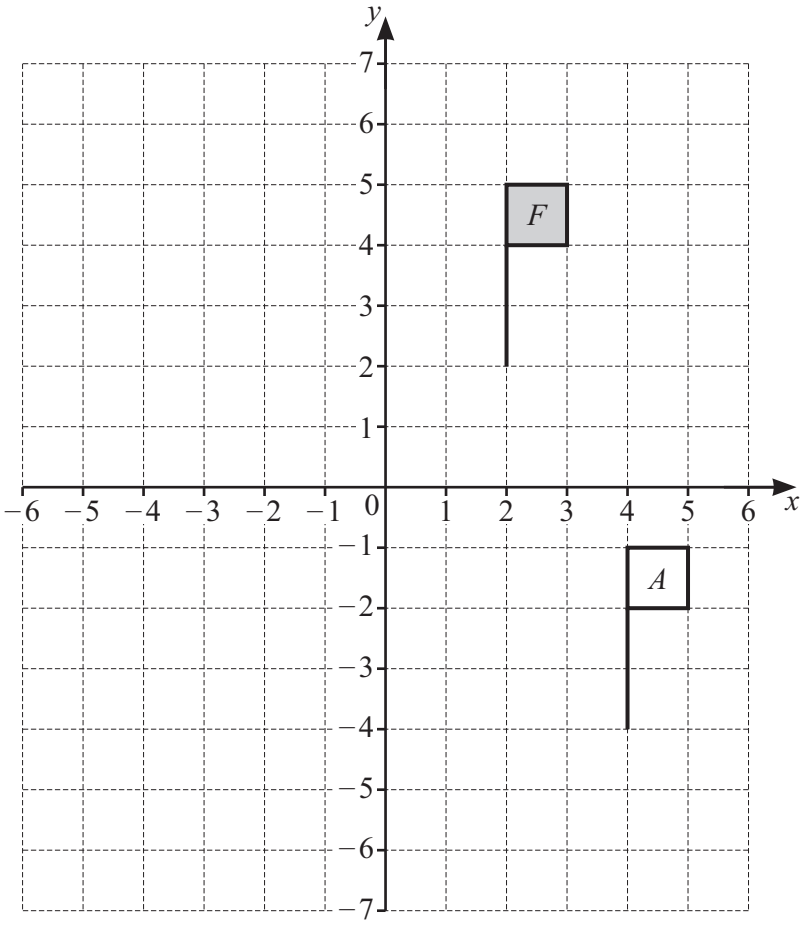
$$2\frac{5}{6} \div 4\frac{1}{4}$$

Write your answer as a fraction in its simplest form.

..... [3]

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19 The grid shows two flags, F and A.



(a) On the grid, draw the image of flag F after a reflection in the line $x = -1$. [2]

(b) On the grid, draw the image of flag F after a rotation of 180° about (0, 0). [2]

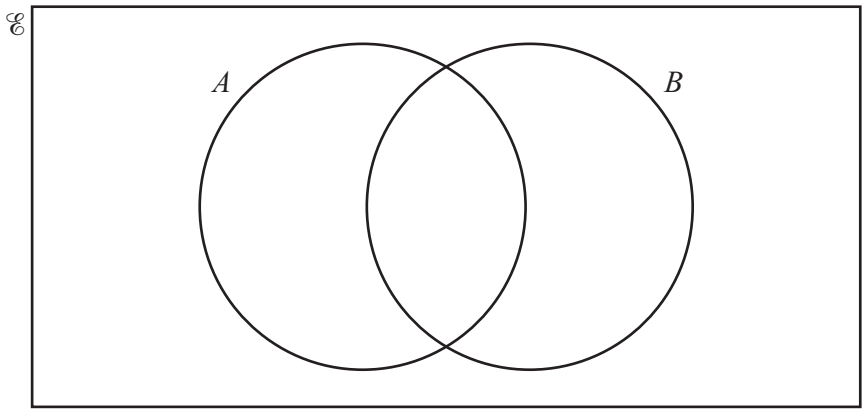
(c) Describe fully the **single** transformation that maps flag F onto flag A.

.....

..... [2]

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20 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{1, 3, 5, 7, 9\}$
$B = \{1, 3, 6, 10\}$



(a) Use this information to complete the Venn diagram. [2]

(b) List the elements of $A \cap B$.

..... [1]

(c) Find $n(B')$.

..... [1]

21 Simplify.

$$\frac{18x^8}{9x^2}$$

..... [2]

22 Work out the size of one interior angle of a regular hexagon.

..... [2]

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23 There are two charges for crossing a bridge.

Cars	$\$a$
Other vehicles	$\$b$

On Monday 4 cars and 20 other vehicles pay a total of \$130.
On Tuesday 6 cars and 15 other vehicles pay a total of \$105.

Write down two equations and solve them to find the value of a and the value of b.

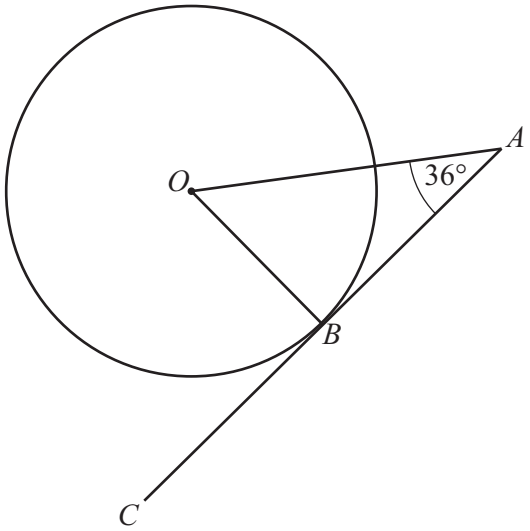
$a =$ .....

$b =$ .....

[6]

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NOT TO SCALE

B is a point on the circle, centre O.
ABC is a tangent to the circle at B and angle $OAB = 36°$.

Work out the size of angle AOB.

Angle $AOB =$ ..... [1]

25 **(a)** Expand and simplify.

$$(x-5)(x+2)$$

..... [2]

(b) Factorise.

$$5x^3 + 10x$$

..... [2]

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26 The length, l metres, of a rope is 16.32 metres, correct to 2 decimal places.

Complete this statement about the value of l.

..... $\leqslant l <$ ..... [2]

27 **(a)** These are the first four terms of a sequence.

2 8 14 20

Find the nth term of this sequence.

..... [2]

(b) The nth term of a different sequence is $n^2 + 10$.

Find the first three terms of this sequence.

..... , ... , ... [2]

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