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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.

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 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 $\sqrt{144}$.

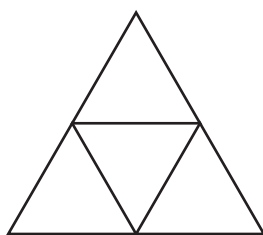
..... [1]

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

..... [1]



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]

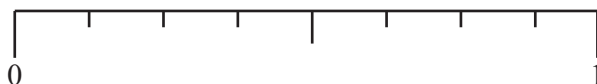
(b) Write $\frac{9}{100}$ as a percentage.

..... % [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 ($\downarrow$) 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]



- 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.

..... $^{\circ}\text{C}$ [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.

..... $^{\circ}\text{C}$ [1]





- 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.

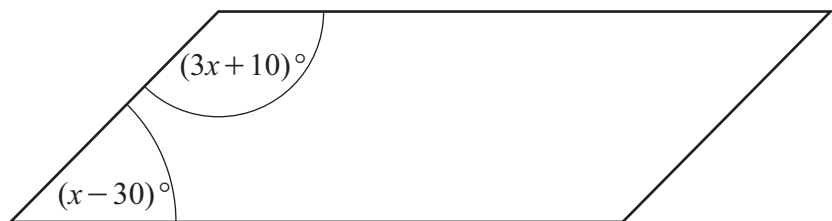
Will the median increase or decrease?
Give a reason for your answer.

..... because

..... [1]



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 .

$x = \dots\dots\dots$ [4]

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

$\dots\dots\dots$ [1]

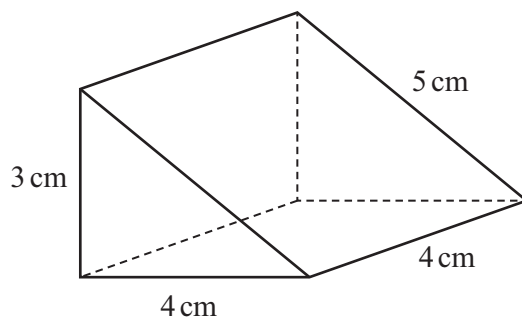




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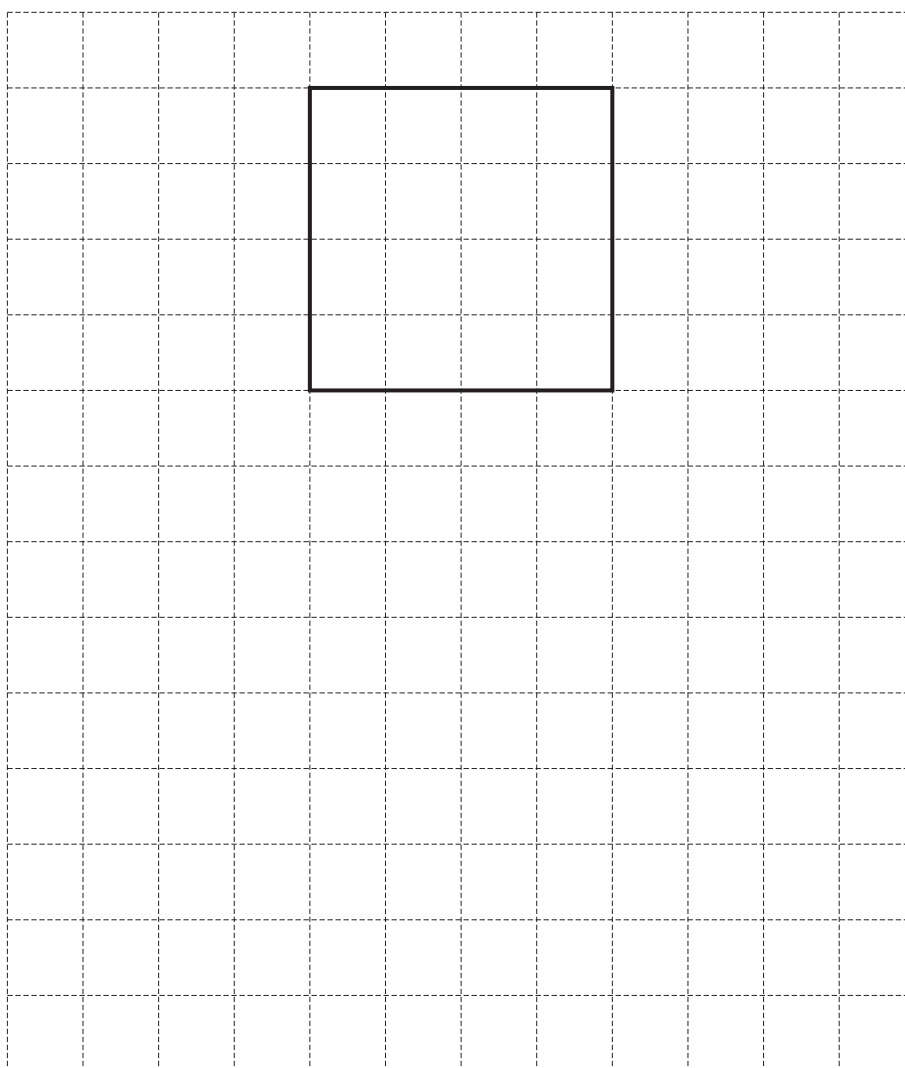
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The diagram shows a right-angled triangular prism.

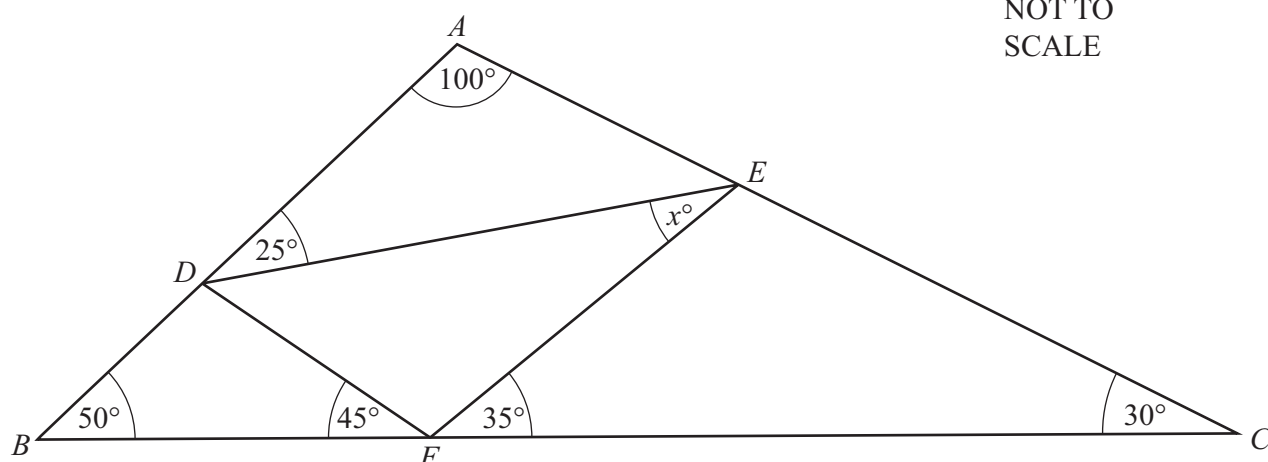
Complete the net of this prism on the 1 cm^2 grid.
One face has been drawn for you.



[3]



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



Find the value of x .

$x = \dots\dots\dots$ [3]

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

Find the value of n .

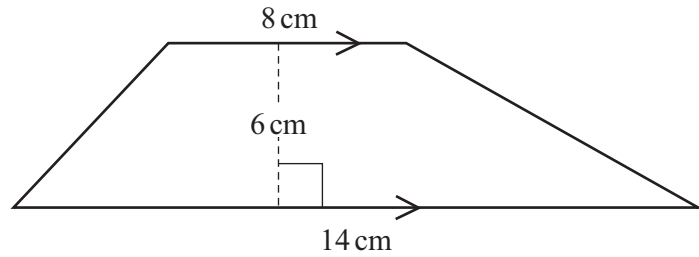
$n = \dots\dots\dots$ [3]

- 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.

$\dots\dots\dots$ $<$ $\dots\dots\dots$ $<$ $\dots\dots\dots$ $<$ $\dots\dots\dots$ [2]
smallest





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Calculate the area of this trapezium.

18 Work out.

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

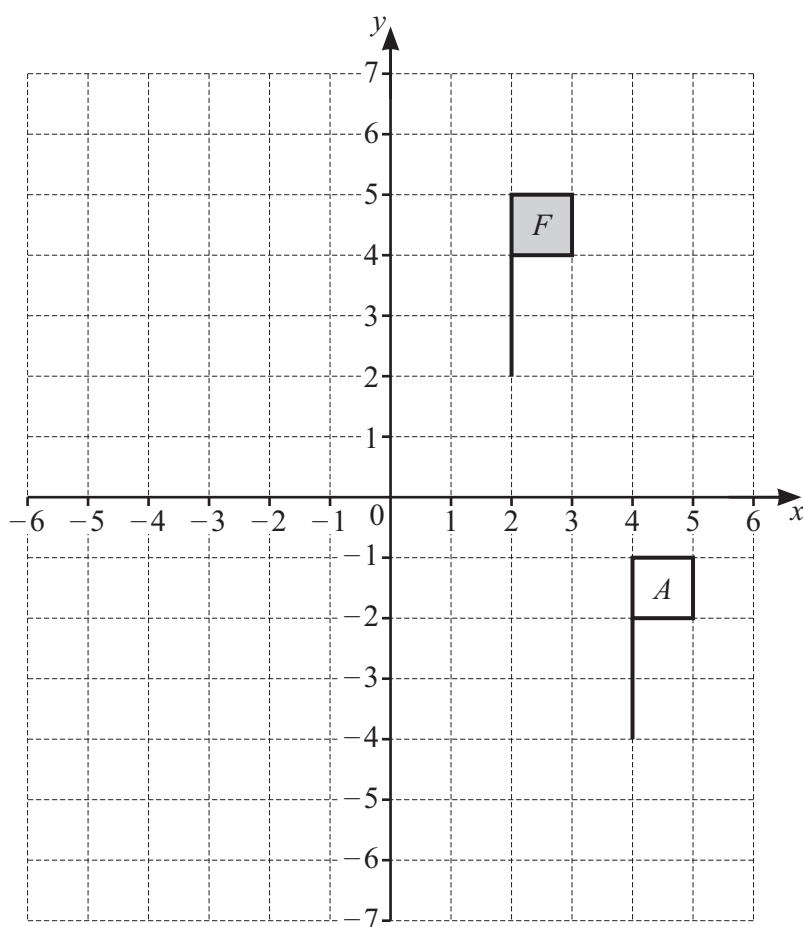
Write your answer as a fraction in its simplest form.

..... cm² [2]

..... [3]



19 The grid shows two flags, F and A .



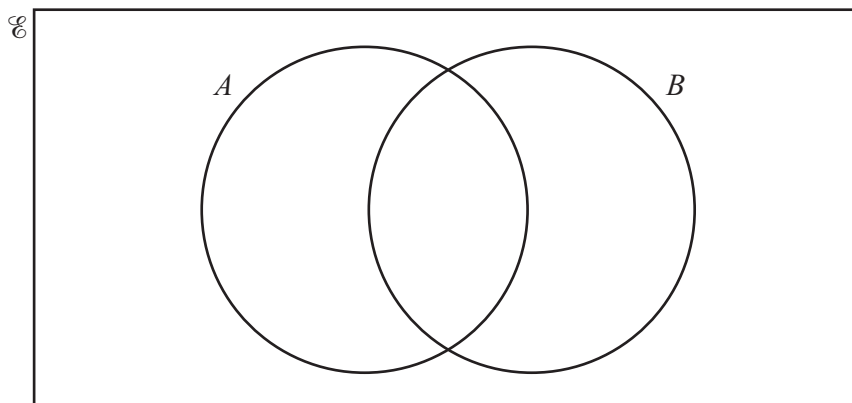
- (a) On the grid, draw the image of flag F after a reflection in the line $x = -1$. [2]
- (b) On the grid, draw the image of flag F after a rotation of 180° about $(0, 0)$. [2]
- (c) Describe fully the **single** transformation that maps flag F onto flag A .

.....

..... [2]



- 20 $\mathcal{C} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{1, 3, 5, 7, 9\}$
 $B = \{1, 3, 6, 10\}$



(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]



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 .

$$a = \dots\dots\dots$$

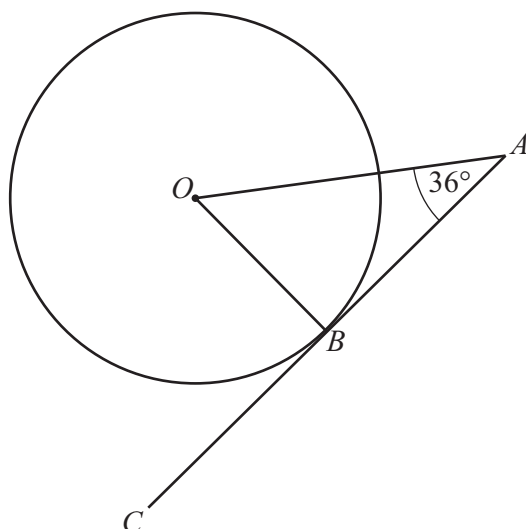
$$b = \dots\dots\dots$$

[6]





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

Work out the size of angle AOB .

Angle $AOB = \dots\dots\dots$ [1]

25 (a) Expand and simplify.

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

$\dots\dots\dots$ [2]

(b) Factorise.

$$5x^3 + 10x$$

$\dots\dots\dots$ [2]



- 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 .

$$\dots \leq l < \dots \quad [2]$$

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

2 8 14 20

Find the n th term of this sequence.

$$\dots \quad [2]$$

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

Find the first three terms of this sequence.

$$\dots, \dots, \dots \quad [2]$$





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