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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 $\sqrt{144}$.

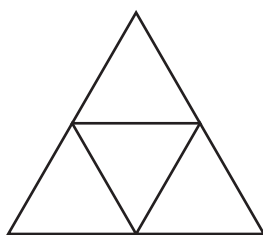
..... [1]

- (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]

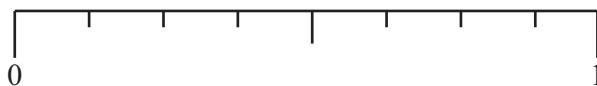
(b) Write $\frac{9}{100}$ as a percentage.

..... % [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.

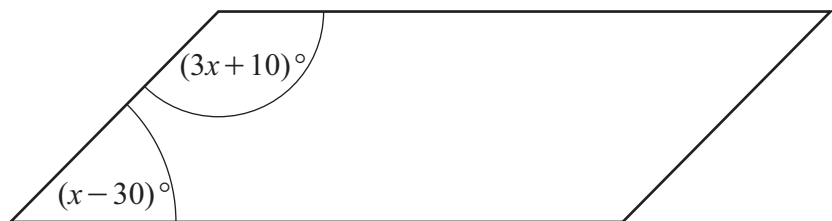
Will the median increase or decrease?
Give a reason for your answer.

..... because

..... [1]



- 12 The diagram shows a parallelogram.



NOT TO
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- (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.

$$\dots\dots\dots [1]$$

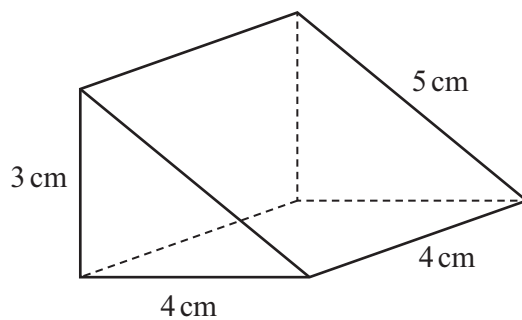




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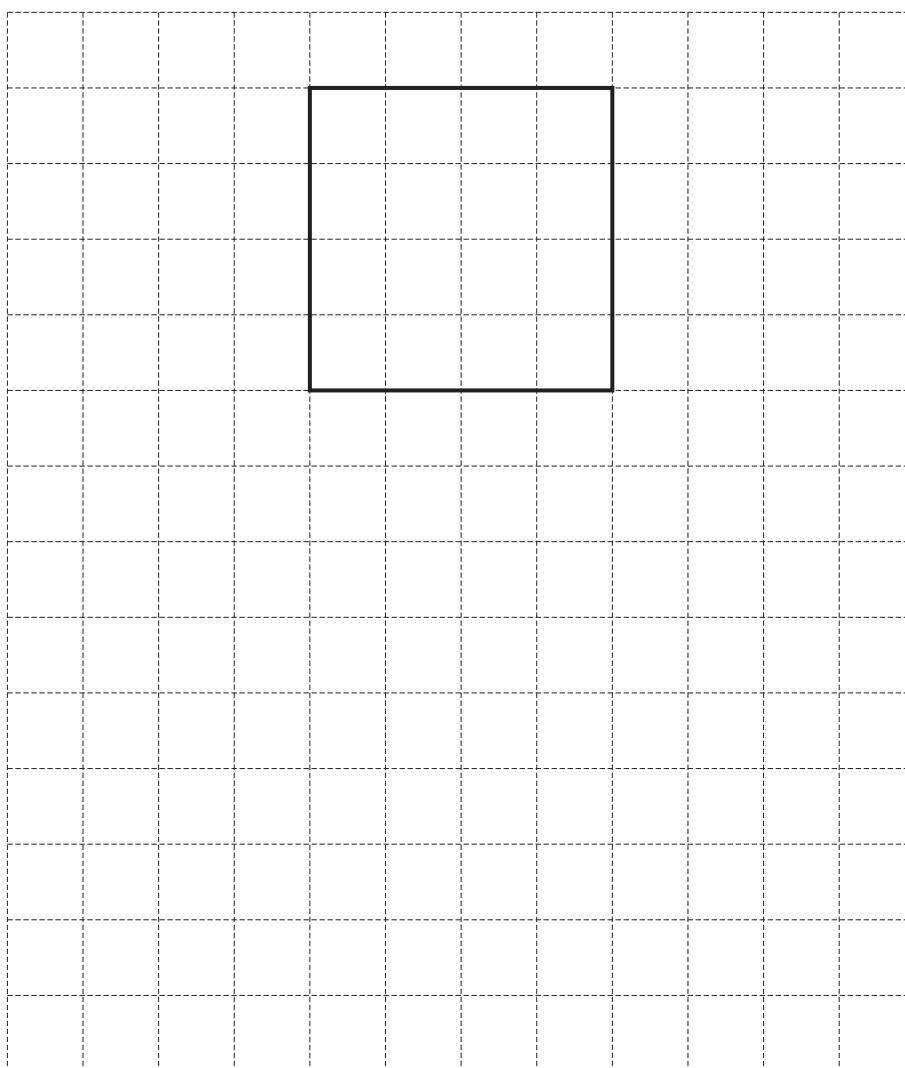
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The diagram shows a right-angled triangular prism.

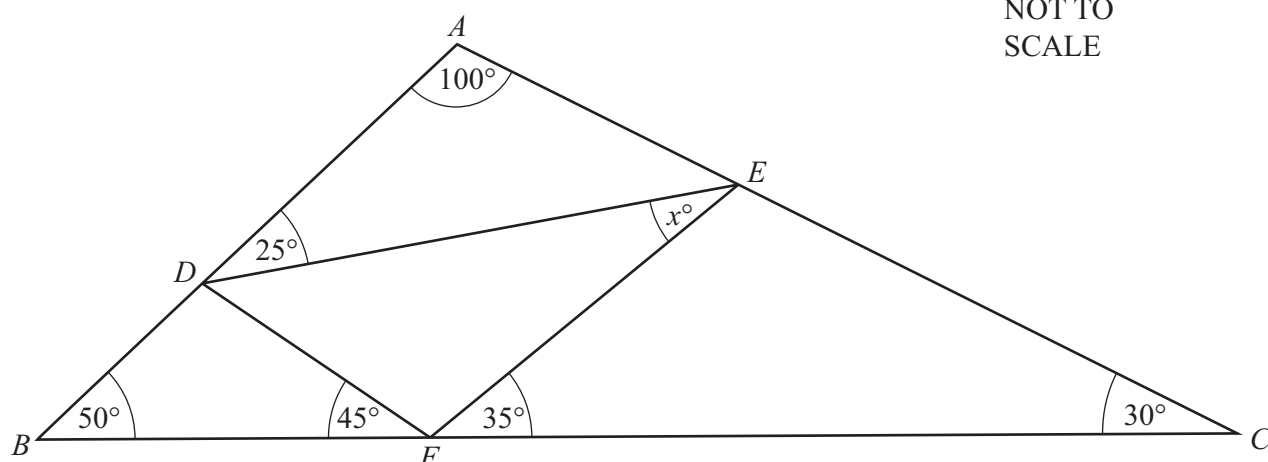
Complete the net of this prism on the 1 cm^2 grid.
One face has been drawn for you.



[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 .

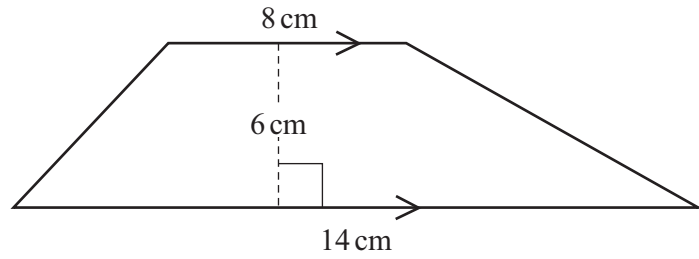
$n = \dots\dots\dots$ [3]

- 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.

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

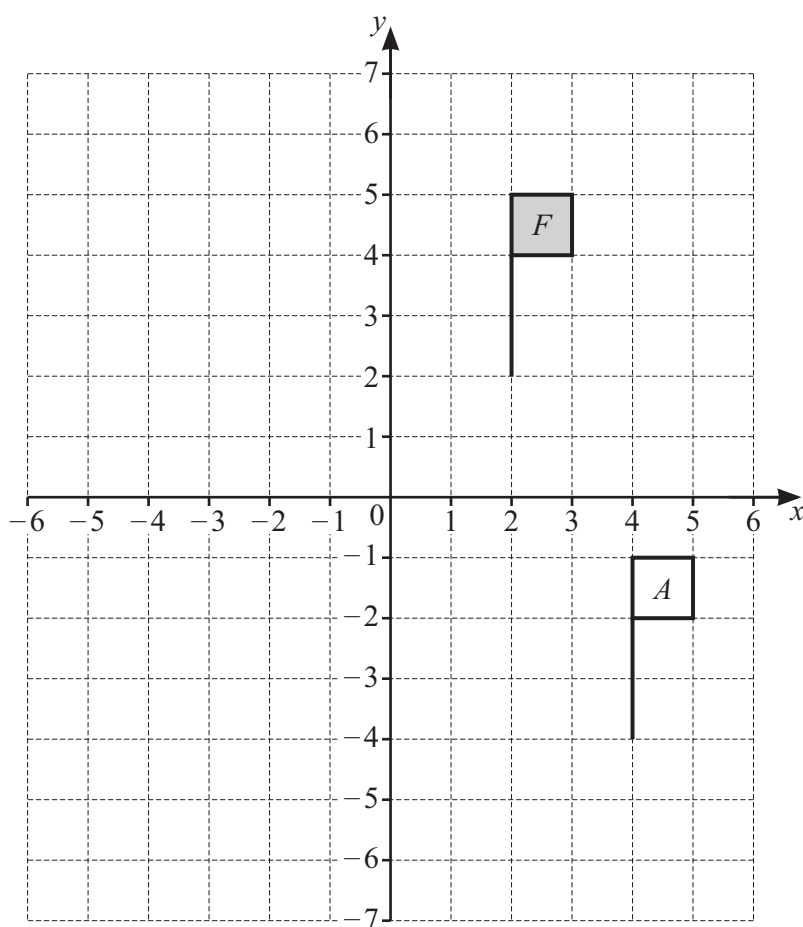
Write your answer as a fraction in its simplest form.

..... cm² [2]

..... [3]



19 The grid shows two flags, F and A .



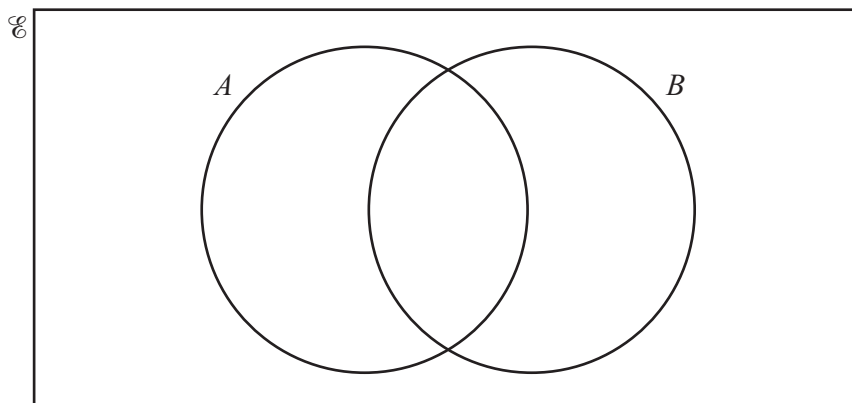
- (a) On the grid, draw the image of flag F after a reflection in the line $x = -1$. [2]
- (b) On the grid, draw the image of flag F after a rotation of 180° about $(0, 0)$. [2]
- (c) Describe fully the **single** transformation that maps flag F onto flag A .

.....

..... [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 .

$a =$

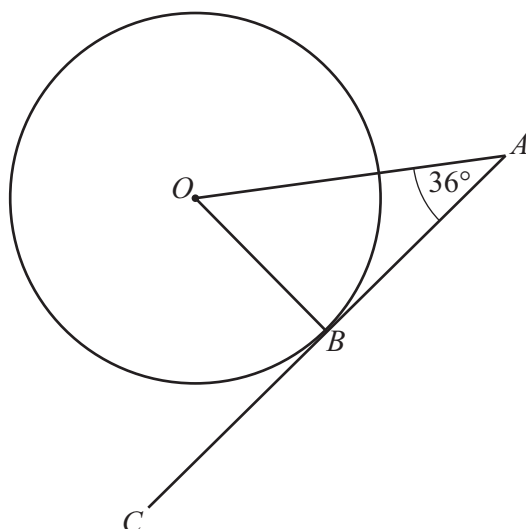
$b =$

[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 .

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

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

2 8 14 20

Find the n th term of this sequence.

$$\dots\dots\dots [2]$$

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

Find the first three terms of this sequence.

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





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