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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.

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.

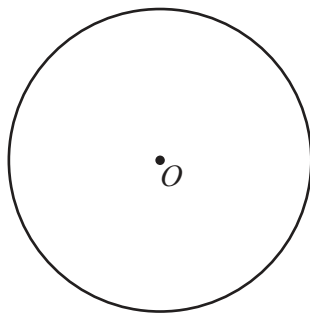
- 1 (a) Write the number four hundred and sixty thousand and five in figures.

..... [1]

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

..... [1]

2

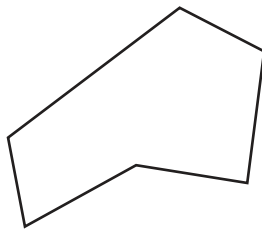


The diagram shows a circle, centre O .
On the diagram

- (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 .

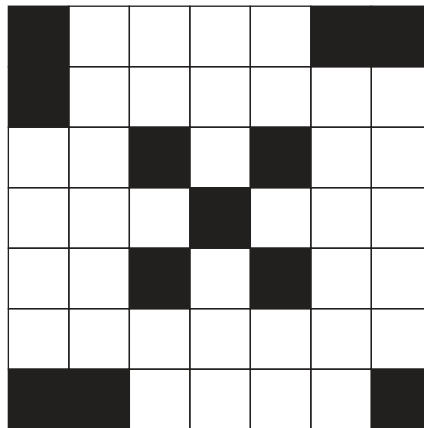
Leave in your construction arcs.

The line AC has been drawn for you.



[2]

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



[1]





5

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.

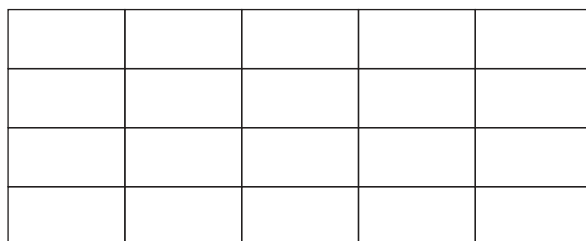
..... [1]

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.



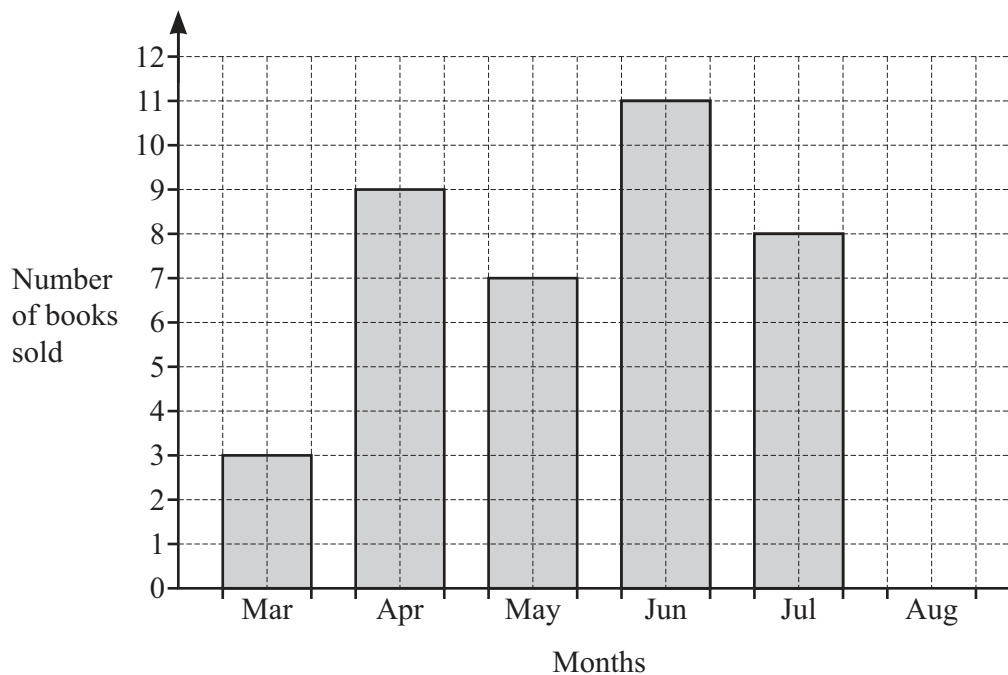
[1]

(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.

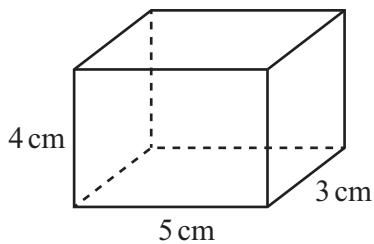
..... $^{\circ}\text{C}$ [1]

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

Work out the temperature at 9 am.

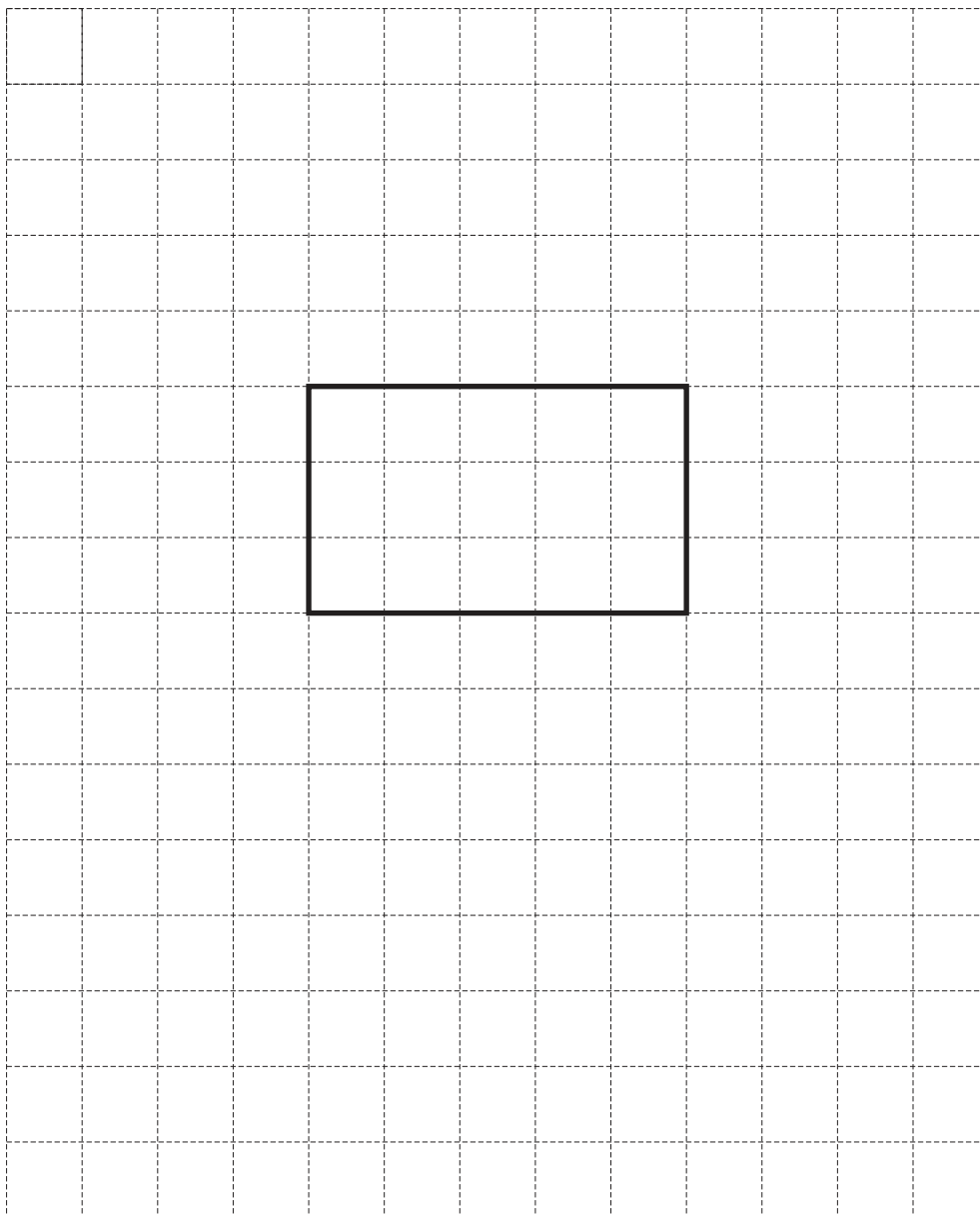
..... $^{\circ}\text{C}$ [1]





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]

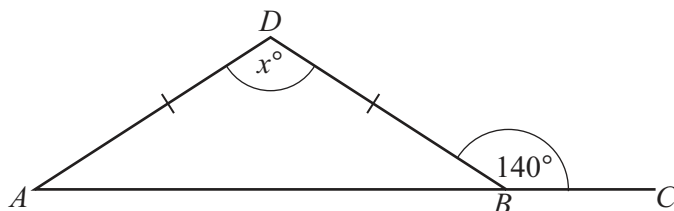
(b) Find the number of children over 2 **years** old.

..... [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]

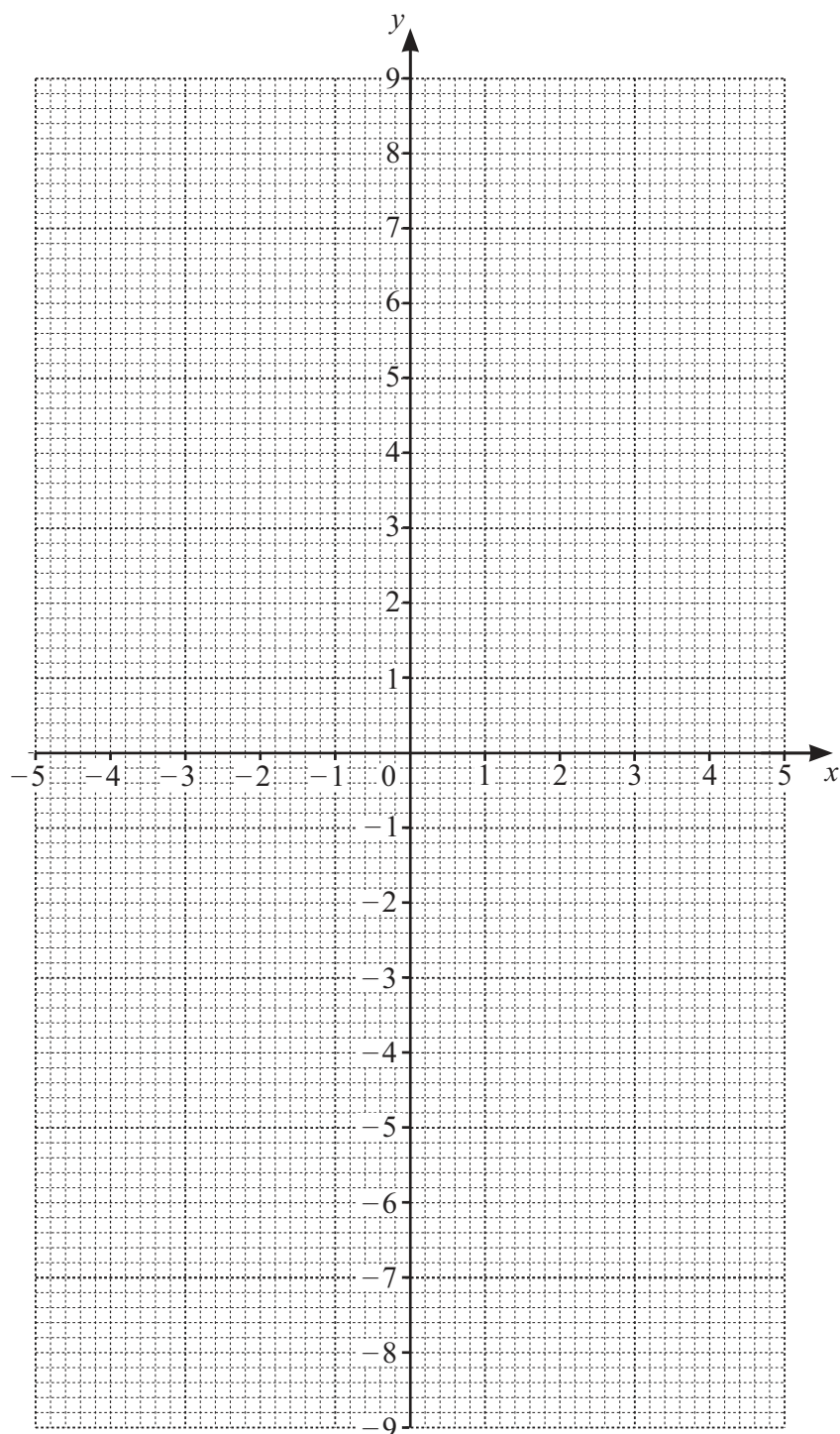


- 16 (a) Complete the table of values for $y = \frac{9}{x}$.

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 $-4.5 \leq x \leq -1$ and $1 \leq x \leq 4.5$.



[4]

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

..... [1]

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

..... [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.

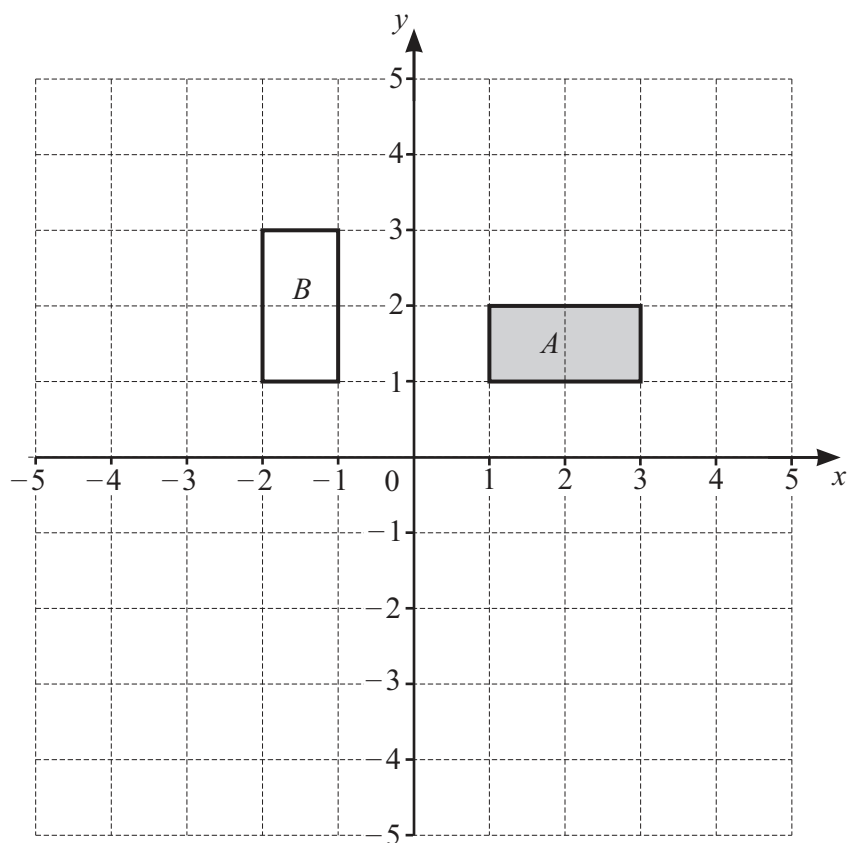
This is $\frac{3}{5}$ of the students who take the test.

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]





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 .

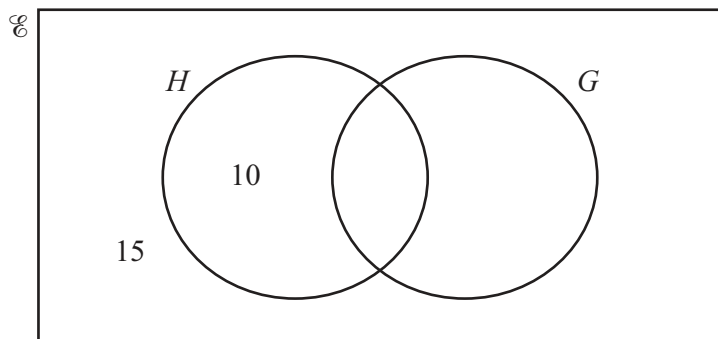
$y =$ [1]





- 24 $\mathcal{C} = \{\text{students in a year group}\}$
 $H = \{\text{students who study History}\}$
 $G = \{\text{students who study Geography}\}$

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.

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

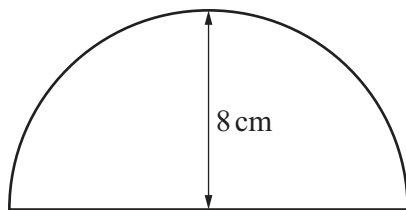
..... [2]

- 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]

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