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MATHEMATICS **0580/32**

Paper 3 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.
- You should use a scientific calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For π, use either your calculator value or 3.142.

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.

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

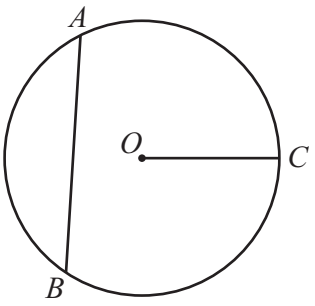
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1 A, B and C are points on a circle, centre O.



(a) Write down the mathematical name for line OC.

..... [1]

(b) Write down the mathematical name for line AB.

..... [1]

2 Write down all the factors of 32.

..... [2]

3 Write one of the symbols $<$, $>$ or $=$ in each statement to make it correct.

$\frac{2}{3}$ 0.667

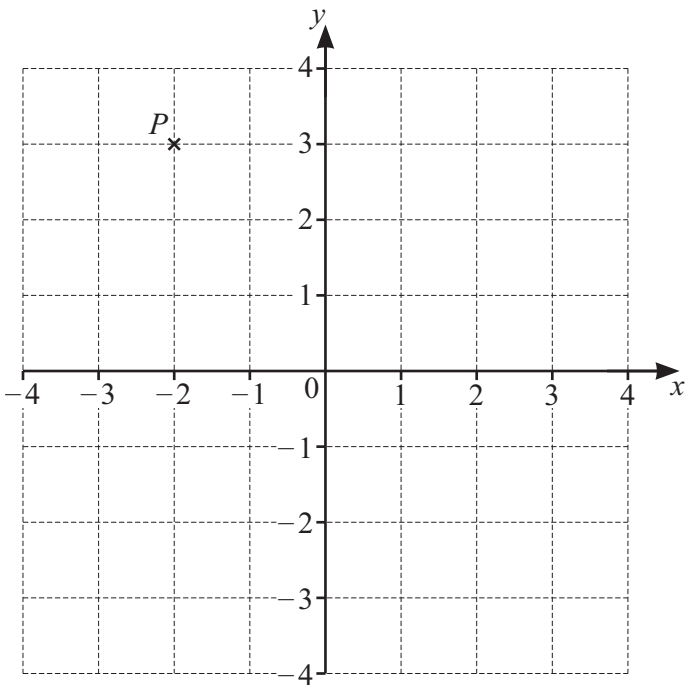
$\frac{1}{8}$ 12.5%

$\frac{7}{8}$ ..... $\frac{71}{80}$

[2]

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4



(a) Write down the coordinates of point P.

(..... , ...) [1]

(b) On the grid, draw the line $y = x$. [1]

(c) On the grid, draw the line that goes through point P and is perpendicular to the line $y = x$. [1]

5 Solve.

(a) $8x = 5$

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

(b) $x + 8 = 5$

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

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6

0	1	8	27	39	51	59	81

From the list of numbers, write down

(a) a square number

..... [1]

(b) the value of 39^0

..... [1]

(c) a prime number.

..... [1]

7 Calculate $\sqrt{361} + 1$.

..... [1]

8 Complete these statements.

65 000 centimetres = ... metres

3.25 litres = ... millilitres [2]

9 **(a)** Shape *A* is a quadrilateral with only one pair of parallel lines.

Write down the mathematical name of shape *A*.

..... [1]

(b) Shape *B* is a quadrilateral with
- two pairs of parallel lines
- all four sides equal
- no right angles.

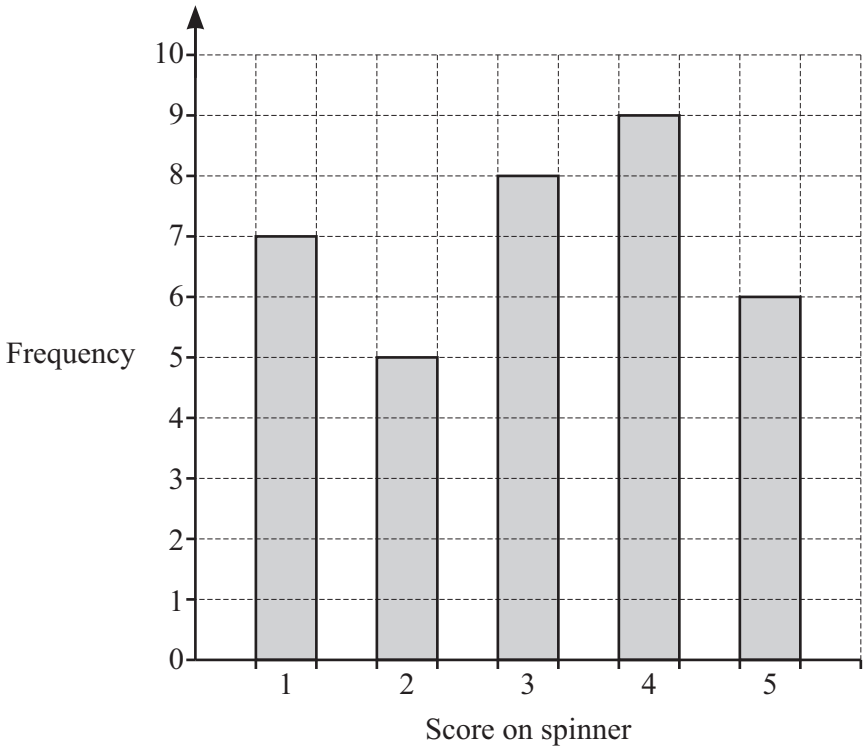
Write down the mathematical name of shape *B*.

..... [1]

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10 The bar chart shows the frequency of each score on a spinner.



Calculate the mean score.

..... [3]

11 $Y = 3t^2 + 2m$

Find the value of Y when $t = 6$ and $m = -3$.

$Y =$ ..... [2]

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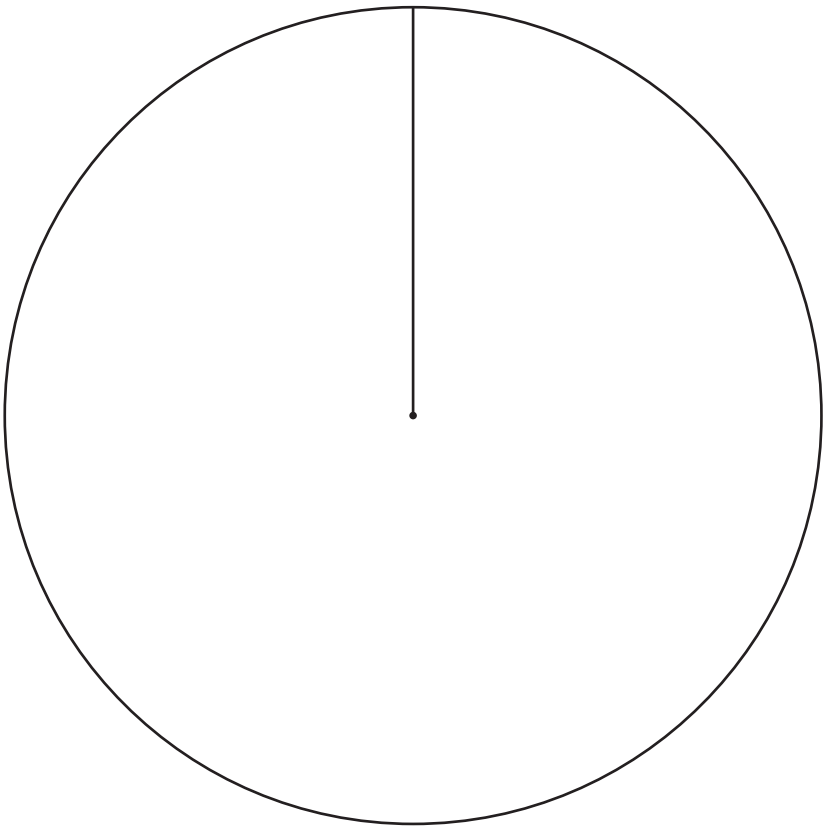
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12 The table shows the results of a survey about the colour of 90 cars in a car park.

Colour of car	Frequency	Pie chart sector angle
Black	16	
White	34	
Other	40	

(a) Complete the table. [2]

(b) Complete the pie chart.



[2]

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13 Find the value of 8^5.

Give your answer correct to 3 significant figures.

..... [2]

14 **(a)** Ada works from Monday to Friday.
Her working hours each day are 08 00 to 12 30 and 13 30 to 17 00.

Find the number of hours she works in 5 days.

..... hours [2]

(b) Ada is paid $15.20 per hour.

Work out her pay for these 5 days.

$ ..... [1]

(c) On Saturday she is paid $1\frac{1}{2}$ times her normal hourly rate.

Work out her hourly rate of pay for Saturday.

$ ..... [1]

(d) Ada changes 370 euros into dollars.
The exchange rate is $1 = 0.925 euros.

Work out the amount she receives.

$ ..... [1]

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15 The scale drawing shows the position of ship A.
The scale is 1 centimetre represents 40 kilometres.



Scale : 1 cm to 40 km

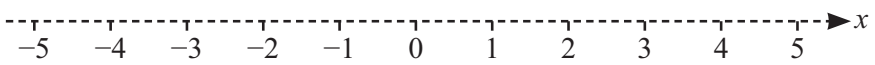
Ship B is 220 km from ship A on a bearing of 140°.

On the scale drawing, mark the position of ship B. [2]

16 Find 57% of \$128.

\$ ..... [1]

17 Represent the inequality $x \geqslant 3$ on the number line.

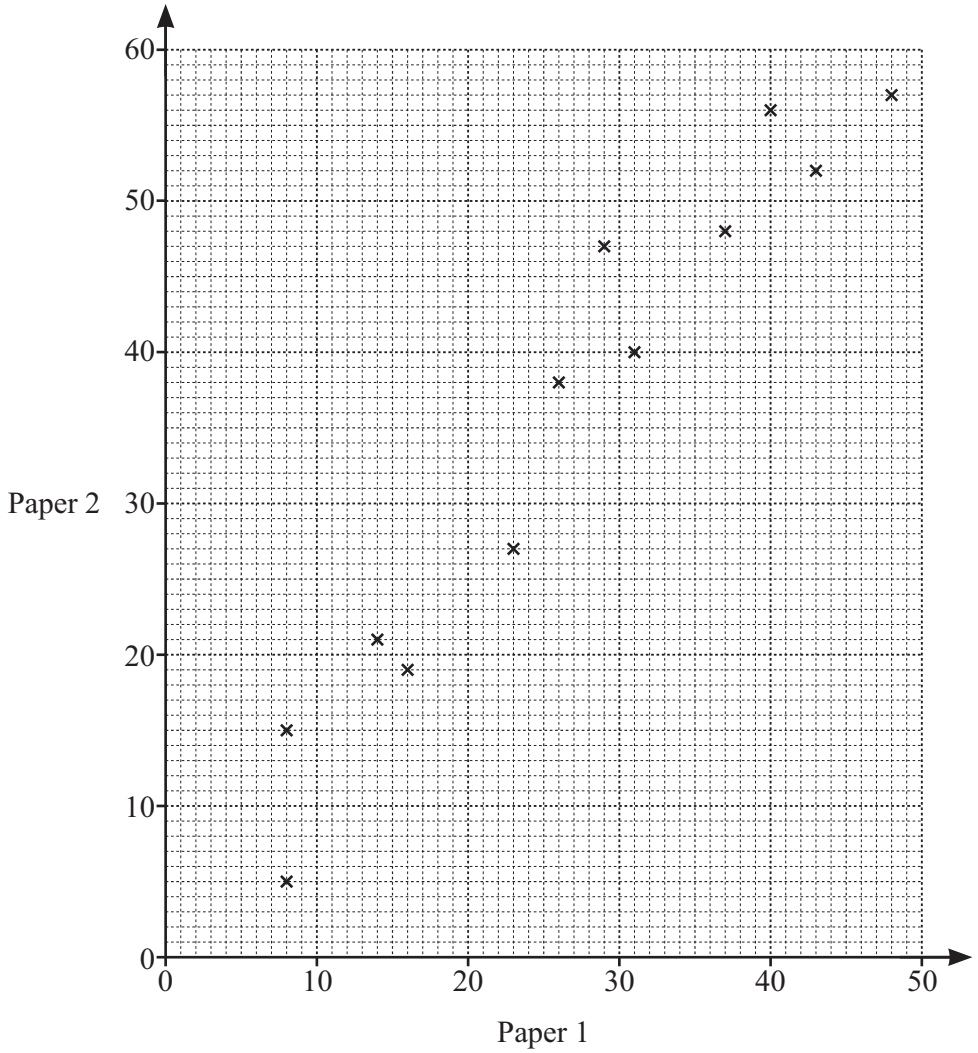


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18 A school records the marks students score in Paper 1 and Paper 2 of a subject.
The scatter diagram shows the scores for twelve students.



(a) What type of correlation is shown in the scatter diagram?

..... [1]

(b) On the scatter diagram, draw a line of best fit. [1]

(c) Another student scores 35 on Paper 1.

Use your line of best fit to find an estimate for their score on Paper 2.

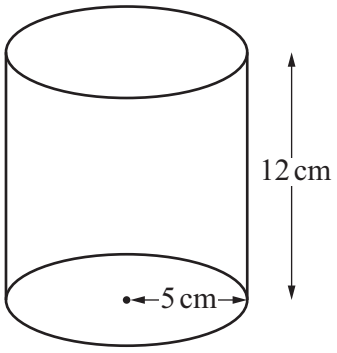
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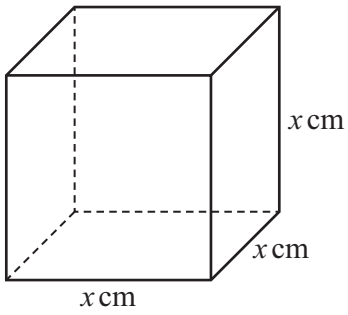
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19 The diagram shows a cylinder and a cube.





NOT TO SCALE

The cylinder has the same volume as the cube.

Find the value of x.

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

20 A town has two cinemas, Movie Scene and Flix.
The table shows the mean and range of the audience numbers.

	Mean	Range
Movie Scene	83	52
Flix	105	25

(a) Which cinema has higher audience numbers on average?
Give a reason for your choice.

Cinema ..... because .....

..... [1]

(b) Which cinema has greater variation in its audience numbers?
Give a reason for your choice.

Cinema ..... because .....

..... [1]

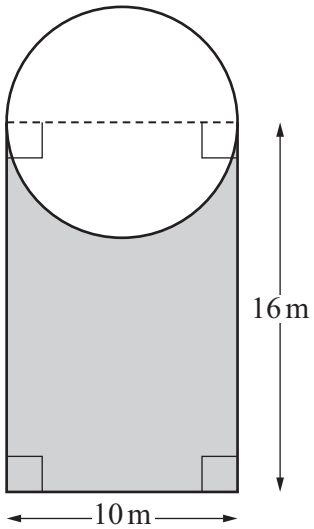
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21 Calculate $(5.6 \times 10^{-3}) \div (2.4 \times 10^{-5})$.

Write your answer in standard form.

..... [2]

22



NOT TO SCALE

The diagram shows a garden.
The garden has a circular pond and the shaded area is grass.
The width of the grass area is equal to the diameter of the pond.

(a) Find the area of the pond.

..... m^2 [2]

(b) Find the area of the grass.

..... m^2 [2]

(c) Find the percentage of the garden that is grass.

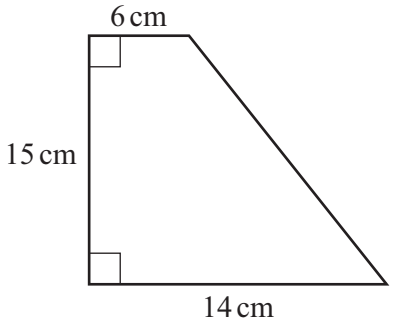
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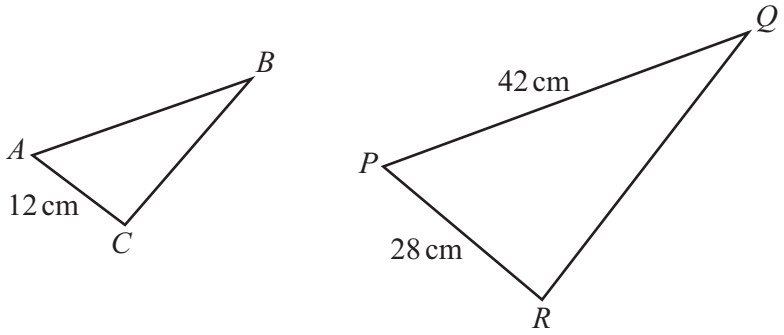


NOT TO SCALE

Calculate the perimeter of this trapezium.

..... cm [4]

24 Triangles *ABC* and *PQR* are mathematically similar.



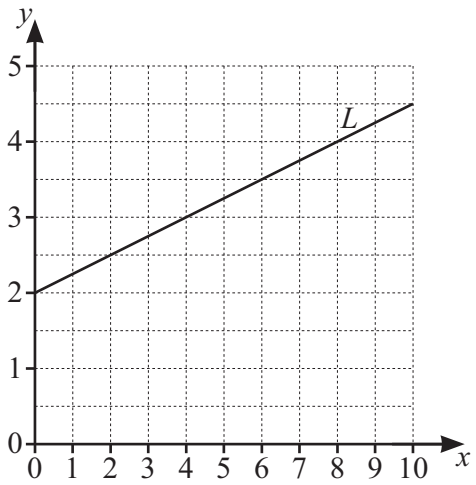
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Calculate *AB*.

AB = ... cm [2]

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25 **(a)** The grid shows line L.



Find the equation of line L in the form $y = mx + c$.

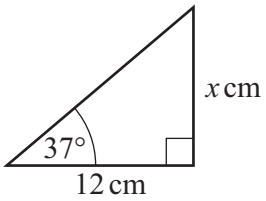
$y =$ ..... [3]

(b) Another line, R, has equation $y = -3x + 5$.

Find the equation of the line which is parallel to R and goes through the point (1, 5).
Give your answer in the form $y = mx + c$.

$y =$ ..... [2]

26 The diagram shows a right-angled triangle.



NOT TO SCALE

Calculate the value of x.

$x =$ ..... [2]

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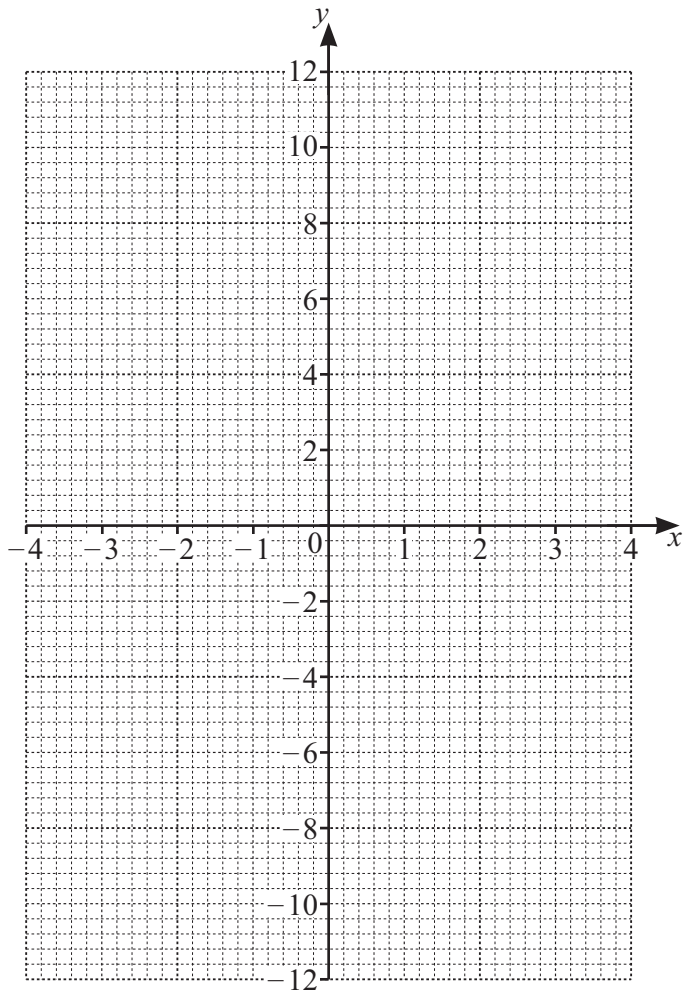
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27 **(a)** Complete the table of values for $y = \frac{12}{x}$.

x	-4	-3	-2	-1		1	2	3	4
y		-4	-6				6	4	

[2]

(b) On the grid, draw the graph of $y = \frac{12}{x}$ for $-4 \leqslant x \leqslant -1$ and $1 \leqslant x \leqslant 4$.



[4]

(c) Use your graph to write down the solution of the equation $\frac{12}{x} = 10$.

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

Question 28 is printed on the next page.

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28 Ali invests $2950 in an account paying 12% compound interest.
Bob invests $3000 in an account paying 12% simple interest.

Show that after 3 years Ali has a larger investment than Bob.

[5]

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