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MATHEMATICS **0580/32**

Paper 3 Calculator (Core) **February/March 2026**

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. Do **not** use correction fluid or tape.
- 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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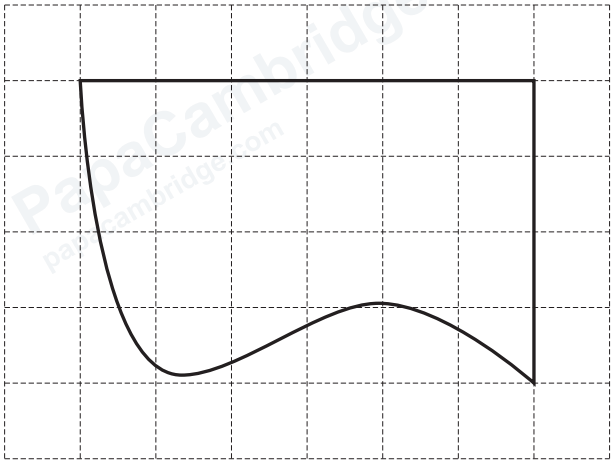
1 Write the number 8017 in words.

..... [1]

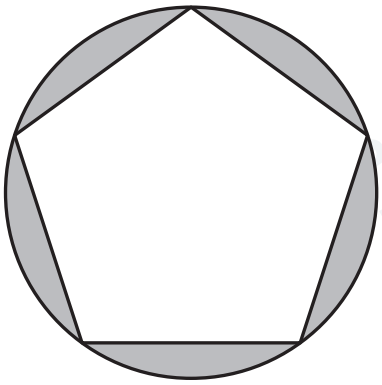
2 The diagram shows a shape drawn on a 1 cm^2 grid.



By counting squares, estimate the area of the shape.

..... cm^2 [1]

3



Draw all the lines of symmetry on this shape. [2]

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4 A café charges \$5.75 for a cake and \$4.40 for a milkshake.
Sue buys 3 cakes and 2 milkshakes.

Work out how much change she receives from a \$50 note.

\$ ..... [3]

5 Calculate.

(a) $3.6^3 - 0.6^3$

..... [1]

(b) $\dfrac{6.589 - 2.985}{\sqrt{0.16}}$

..... [1]

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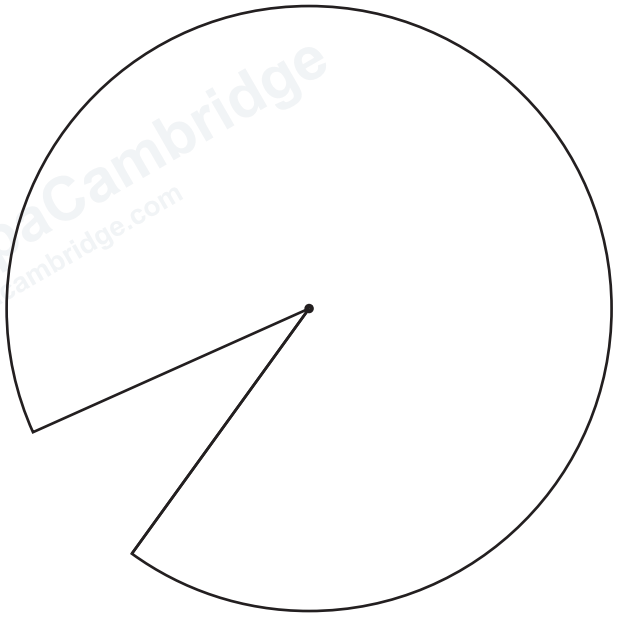

(a) Measure the reflex sector angle.

..... [1]

(b) On the diagram, draw a line that divides the reflex sector into two smaller sectors with angles in the ratio 2 : 13.

[3]

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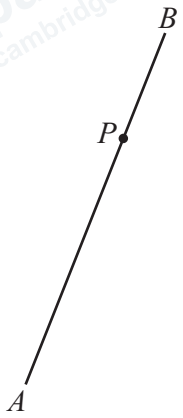

(a) Measure the length of line AB.

..... cm [1]

(b) The point P lies on the line AB.

Draw a straight line, PQ, that is

- perpendicular to line AB

and

- 60% longer than line AB.

[3]

8 Work out a fraction that is exactly half-way between $\frac{1}{6}$ and $\frac{3}{8}$.

..... [2]

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9 (a)



(i) Complete the clock diagram to show the time 13 22. [1]

(ii) A train leaves a station at 13 22.
It takes 170 minutes to reach the first stop.

Work out the time it reaches the first stop.

..... [2]

(b) A bus takes 1 hour 15 minutes to travel 45 km between two towns.

Work out the average speed of the bus in kilometres per hour.

..... km/h [2]

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10 The scale drawing shows the positions of two schools, *A* and *B*.
The scale is 1 centimetre represents 200 metres.



scale: 1 cm to 200 m

(a) Measure the bearing of *B* from *A*.

..... [1]

(b) Write the scale in the form 1 : *n*.

1 : ..... [1]

(c) On a second scale drawing, *A* and *B* are four times as far apart as on the first scale drawing.

Write down the scale of the second scale drawing.
Give your answer in the form 1 : *n*.

1 : ..... [1]

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11 Ede asks 40 students if they prefer to drink water, juice or milk.
She represents the results on a pie chart.

(a) The number of students who prefer milk is represented by a sector angle of 63°.

Calculate the number of students who prefer milk.

..... [2]

(b) Twice as many students prefer water to juice.

Calculate the sector angle that represents the number of students who prefer water.

..... [2]

12 A cuboid has length 10 cm, width 3 cm and height 4 cm.

Work out the surface area of the cuboid.

..... cm^2 [3]

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13 A set of five **different whole** numbers has

- the smallest number −3
- a range of 14
- a median of 8
- a mean of 6.

Work out the four other numbers.
Write your numbers in order, starting with the smallest.

−3 ..... , ... , ... , ... , ... [3]
smallest

14 Solve.

$5(2x - 7) = 79$

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

15 The price of a train ticket is either \$85 or 75 euros.
The exchange rate is 1 euro = \$1.18 .

Calculate the difference between the two prices.
Give your answer in euros.

..... euros [2]

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16 These are the first four diagrams in a sequence.
The diagrams are made using grey squares and white squares.

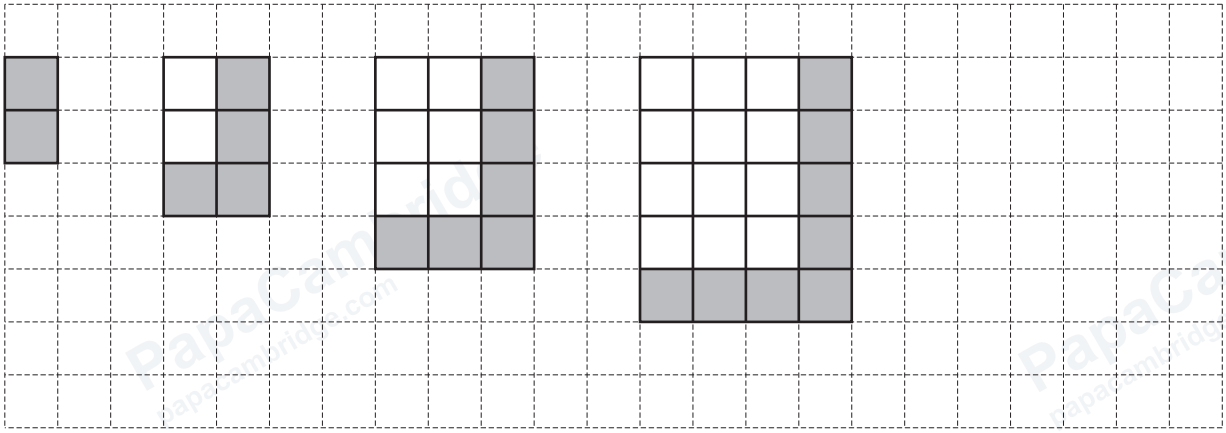

diagram 1 diagram 2 diagram 3 diagram 4 diagram 5

(a) Draw diagram 5 on the grid. [1]

(b) Complete the table for diagram 4 and diagram n.
Write your answers for diagram n in their simplest form.

diagram	1	2	3	4		n
number of grey squares	2	4	6			
number of white squares	0	2	6			$n(n-1)$
total number of squares	2	6	12			

[5]

(c) Complete this statement by writing an expression in terms of n.

The total number of squares in diagram n are the same as the number of white squares in diagram ..... [1]

(d) Mae has 1000 white squares but only 44 grey squares.
She makes the largest possible diagram with her squares.

Work out the number of white squares she uses.

..... [2]

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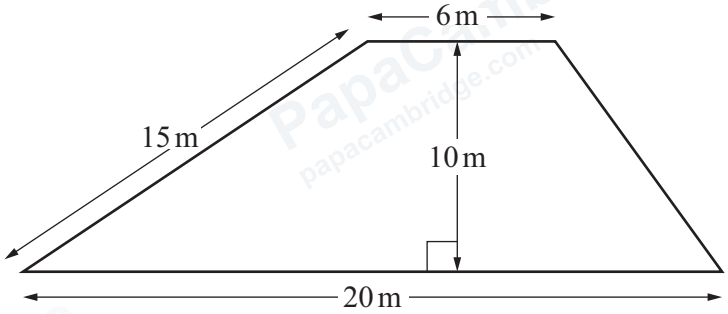
17 **(a)** A cone has a radius of 7 cm and a height of 8 cm.

Work out the volume of the cone.

..... cm^3 [2]

(b)



NOT TO SCALE

Work out the area of the trapezium.
Give the units of your answer.

.... [3]

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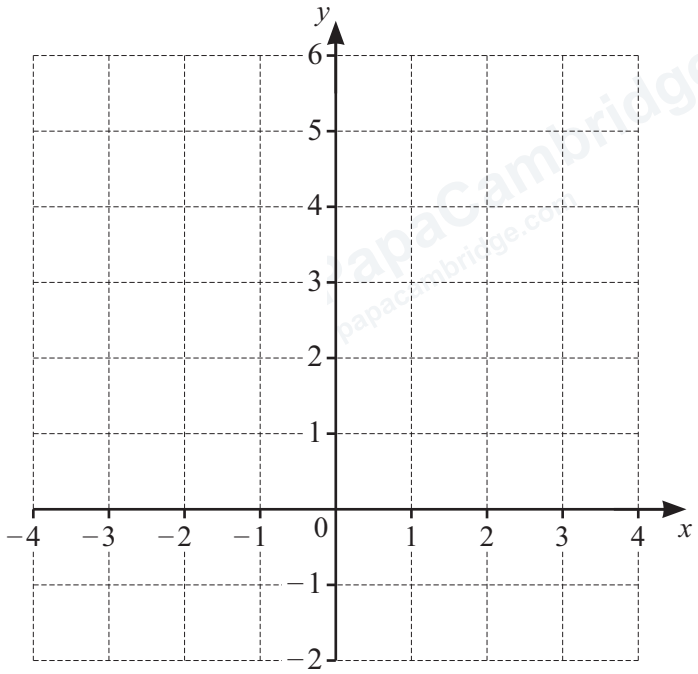
18 (a)



On the grid, draw the graph of $y = 0.5x + 3$ for $-4 \leqslant x \leqslant 4$. [2]

(b) Write down the equation of the line that

- passes through the point $(0, 7)$

and

- has gradient 0.

..... [1]

19 An ant walks at a constant speed of 4.5 cm/s.
The ant takes 13 seconds to walk once around the circumference of a circular plate.

Calculate the diameter of the plate.

..... cm [3]

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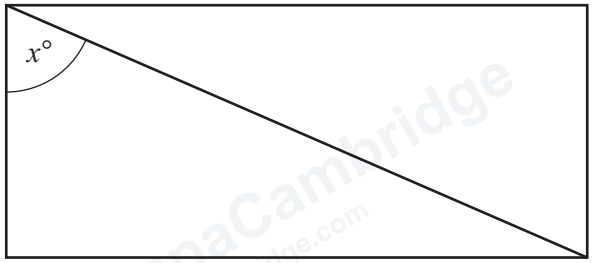
20 The diagram shows a rectangle.
The longest side of the rectangle is 7.6 m.



NOT TO SCALE

The perimeter of the rectangle is 25.6 metres.

Calculate the value of x.

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

21 **(a)** Write $\frac{1}{k \times k}$ as a power of k.

..... [1]

(b) Simplify.

$3w^5 \times 4w^3$

..... [2]

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22 Kim invests $14 700 at a rate of 4.8% per year compound interest.

Calculate the value of her investment at the end of 5 years.
Give your answer to the nearest dollar.

$ ..... [3]

23 Two buses leave the bus station at 08 00.
One returns to the station every 34 minutes.
The other returns to the station every 30 minutes.

Work out the time they will first return to the station together.

..... [3]

24 A man buys a painting for $1200.
He sells the painting for $1360.

Calculate the percentage profit the man makes on the painting.

..... % [2]

Question 25 is on the back page

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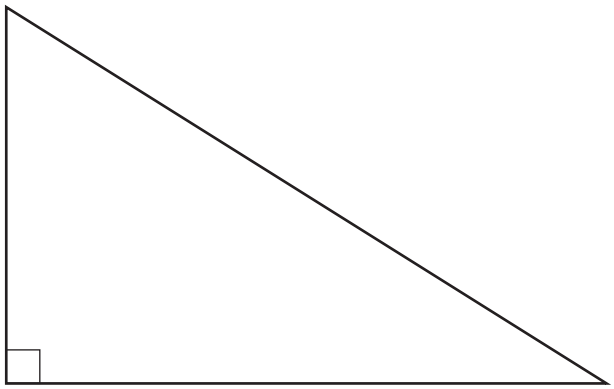

NOT TO SCALE

The area of this triangle is 147 cm^2.

Calculate the length of the longest side.

..... cm [3]

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