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MATHEMATICS

0580/03

Paper 3 Calculator (Core)

For examination from 2025

PRACTICE PAPER

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

- 1 (a) Write in figures the number fifty-three thousand and thirty-five.

..... [1]

- (b) Write 0.08379 correct to 3 decimal places.

..... [1]

- (c) Write down the value of the 7 in the number 570 296.

..... [1]

- 2 Write down the reciprocal of $\frac{2}{9}$.

..... [1]

- 3 Find the value of

(a) $\sqrt[3]{68921}$

..... [1]

(b) 23^2 .

..... [1]

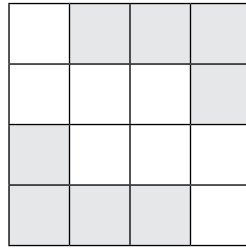
- 4 The cost of hiring a taxi can be worked out using this formula.

$$\text{Total cost} = \$2.20 \text{ per kilometre} + \$0.50 \text{ per minute}$$

Calculate the cost of hiring a taxi for a journey of 15 km that takes 35 minutes.

\$ [2]

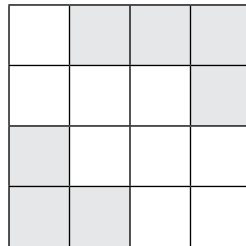
5 (a)



Write down the order of rotational symmetry of the diagram.

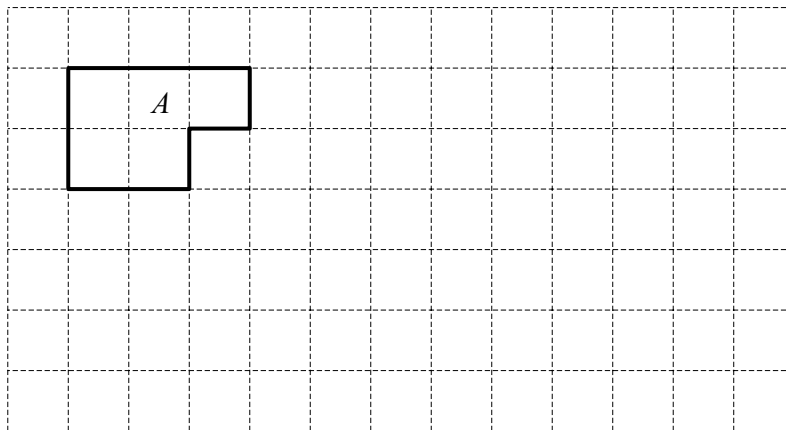
..... [1]

(b)



On the diagram, shade one more small square so that the diagram has only one line of symmetry. [1]

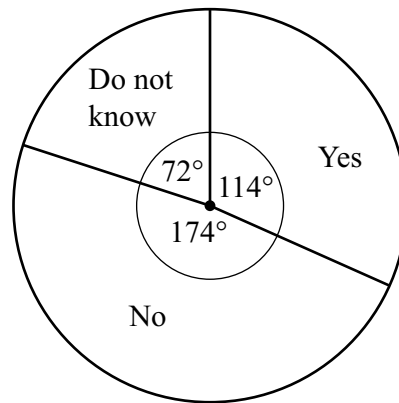
6



On the grid, draw a shape that is congruent to shape *A*.

[1]

- 7 The 840 students in a school are asked if they want a change of school uniform. The results are shown in the pie chart.



Show that the number of students who said Yes is 266.

[1]

- 8 Write these numbers in order, starting with the smallest.

$$\frac{13}{201} \quad 5.6\% \quad 0.065 \quad \frac{5}{89}$$

..... < < < [2]
smallest

- 9** The average temperature at the North Pole is -23°C in January and -11°C in March.

(a) Find the difference between these temperatures.

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

(b) The average temperature in July is 28°C higher than the average temperature in March.

Find the average temperature in July.

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

- 10** Paul has a set of 8 cards, each with a number written on it.

The numbers on the cards are 1, 1, 2, 3, 3, 3, 4, 5.

One card is taken at random.

Write down the probability that the number on the card is

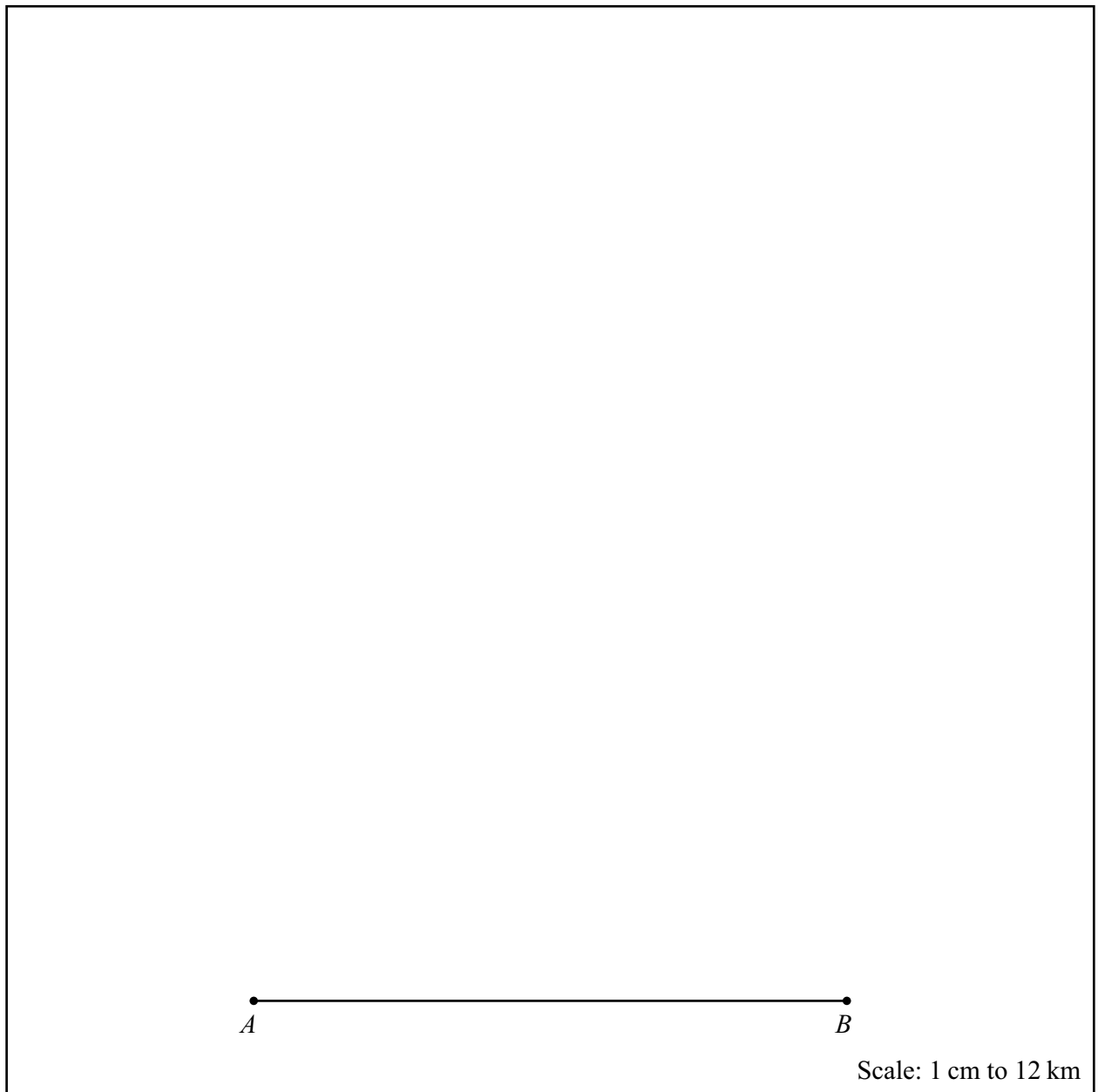
(a) 1

..... [1]

(b) an odd number

..... [1]

- 11** The scale drawing shows the positions of town *A* and town *B*.
The scale is 1 cm represents 12 kilometres.



- (a)** Find the actual distance between town *A* and town *B*.

..... km [2]

- (b)** Town *C* is 72 km from town *A* and 96 km from town *B*.

On the scale drawing, construct the position of town *C*.

[3]

- 12** Jeremy goes on holiday. He parks his car in the airport car park from 10 00 on Tuesday 17 July to 17 00 on Saturday 28 July.
The car park charges are shown below.

Monday to Friday	\$14 per day
Saturday and Sunday	\$8 per day
Part days are charged as full days	

- (a)** Find the total cost of parking his car.

\$ [3]

- (b)** The plane ticket costs \$680 plus a tax of 16%.

Find the total cost of this ticket.

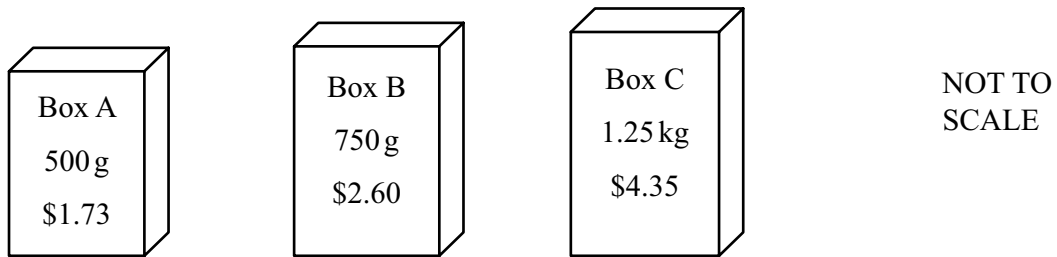
\$ [2]

- (c) The plane flies from Melbourne to Tokyo at an average speed of 783 km/h.
 The distance from Melbourne to Tokyo is 8352 km.
 The plane leaves Melbourne at 09 52 local time.
 The local time in Tokyo is 2 hours behind the local time in Melbourne.

Find the local time in Tokyo when the plane arrives.

..... [4]

- 13 A shop sells cereal in boxes A, B and C.



Work out which box is the best value.
 You must show all your working.

Box [3]

- 14** Sam invests \$12 000 at a rate of $n\%$ per year simple interest.
At the end of 3 years the value of the investment is \$12 900.

Find the value of n .

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

- 15** Six students each bring an apple to school one day.

The list shows the mass of each apple, correct to the nearest gram.

82 94 78 103 88 82

- (a)** Find the mode.

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

- (b)** Another student, Toni, also brings an apple to school.
The mean mass of the 7 apples is 89 g.

Work out the mass of Toni's apple.

$\dots\dots\dots$ g [3]

16 (a) Find the next term in each of these sequences.

(i) 3, 9, 15, 21, ...

..... [1]

(ii) 27, 20, 13, 6, ...

..... [1]

(b) The n th term of a sequence is $60 - 8n$.

Find the largest number in this sequence.

..... [1]

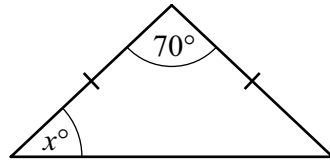
(c) These are the first five terms of a different sequence.

12 19 26 33 40

Find an expression for the n th term of this sequence.

..... [2]

17 (a)

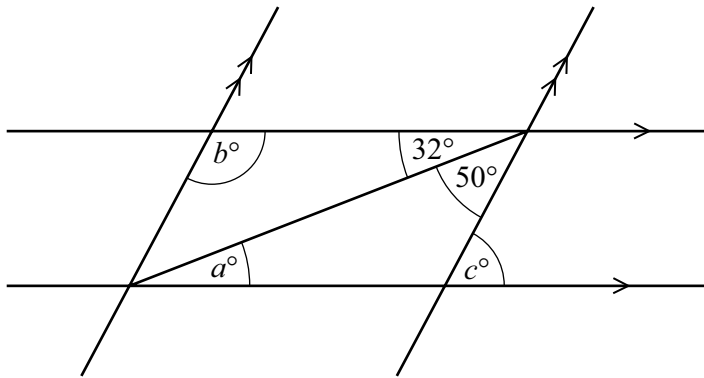
NOT TO
SCALE

The diagram shows an isosceles triangle.

Find the value of x .

$x = \dots\dots\dots$ [2]

(b)

NOT TO
SCALE

The diagram shows two pairs of parallel lines.

Find the value of a , the value of b and the value of c .

$a = \dots\dots\dots$

$b = \dots\dots\dots$

$c = \dots\dots\dots$

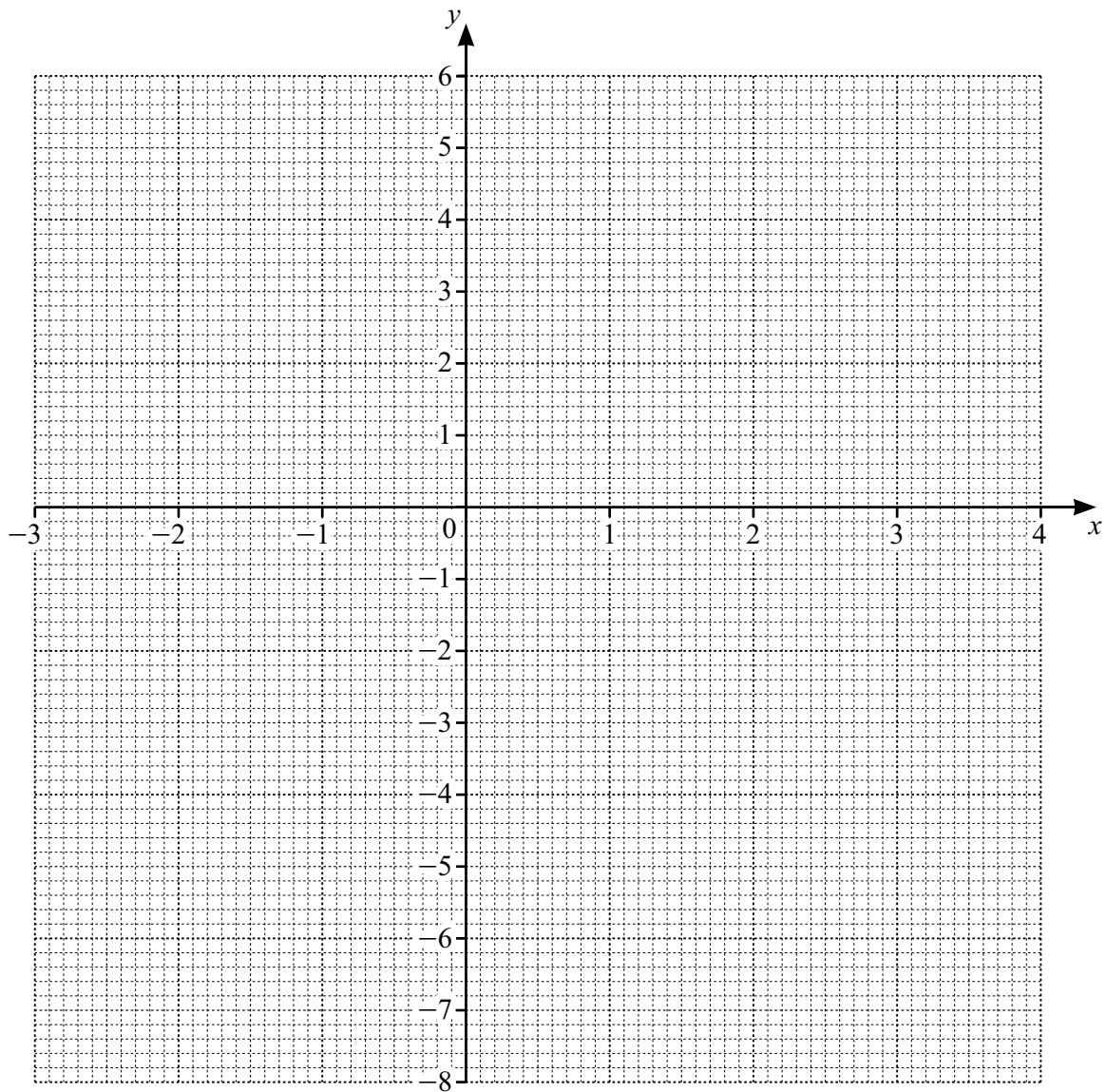
[3]

- 18 (a) Complete the table of values for $y = -x^2 + x + 5$.

x	-3	-2	-1	0	1	2	3	4
y		-1	3			3		

[3]

- (b) On the grid, draw the graph of $y = -x^2 + x + 5$ for $-3 \leq x \leq 4$.

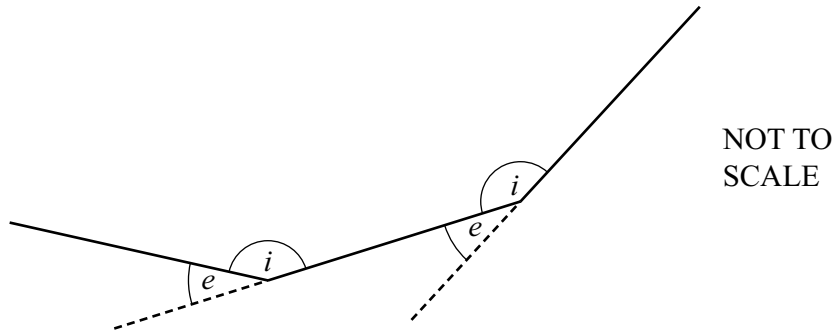


[4]

- (c) Write down the coordinates of the highest point of the graph.

(..... ,) [1]

- 19 The diagram shows part of a regular polygon.



e is an exterior angle.

i is an interior angle.

The ratio $e : i = 2 : 13$.

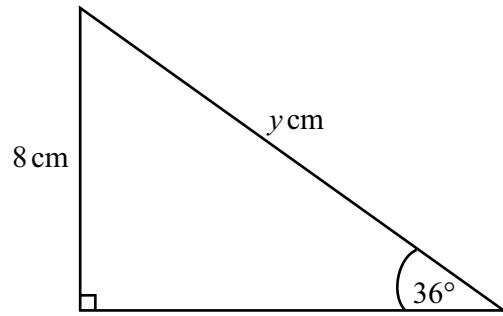
- (a) Work out angle e .

..... [3]

- (b) Work out the number of sides of this regular polygon.

..... [1]

20

NOT TO
SCALE

Calculate the value of y .

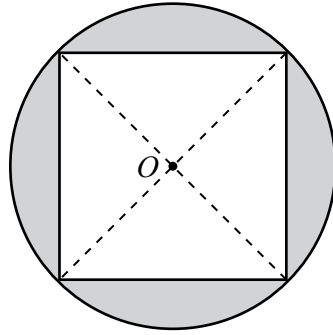
$y = \dots\dots\dots$ cm [3]

- 21 Roberto buys a toy for \$5.00.
He then sells it for \$4.60.

Calculate his percentage loss.

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

22

NOT TO
SCALE

The diagram shows a square with vertices on the circumference of a circle, centre O .
The radius of the circle is 6 cm.

Work out the shaded area.

.....cm² [5]

23 Expand and simplify.

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

..... [2]

24 Rovers, United and City are football teams.

Rovers scored x goals.

United scored 8 goals more than Rovers.

City scored 3 goals less than twice the number of goals scored by Rovers.

The three teams scored a total of 117 goals.

Write down and solve an equation to find the value of x .

$x =$ [4]

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