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MATHEMATICS **0580/33**

Paper 3 Calculator (Core) **May/June 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 **20** pages. Any blank pages are indicated.

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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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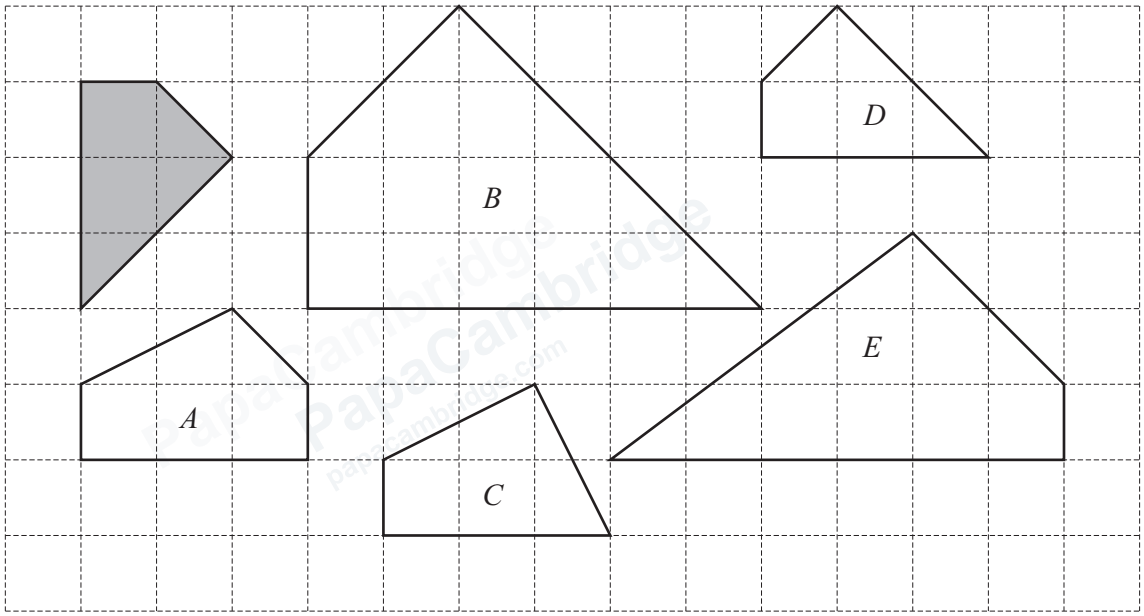
1 Write 4.25 pm using the 24-hour clock.

..... [1]

2 Write down all the factors of 26.

..... [2]

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



(a) Write down the letter of the shape that is congruent to the shaded shape.

..... [1]

(b) Find the area of shape *B*.

..... cm^2 [1]

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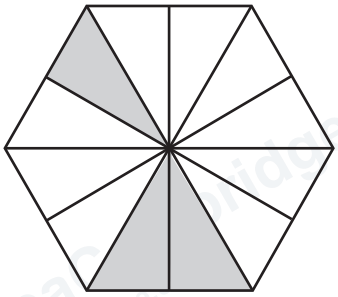
4 Calculate.

$$\frac{32.7}{8.54 - 2.6}$$

Give your answer correct to 2 decimal places.

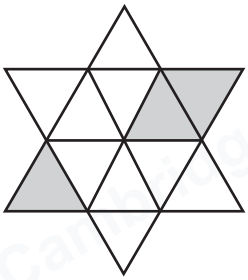
..... [2]

5 **(a)**



Shade some triangles so that the shape has rotational symmetry order 3. [1]

(b)



Shade **one** small triangle so that the shape has two lines of symmetry. [1]

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6 Write these numbers in order, starting with the smallest.

0.581 $\sqrt[3]{0.2}$ $\frac{32}{55}$ $\frac{\pi}{5}$ 58%

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

smallest

7

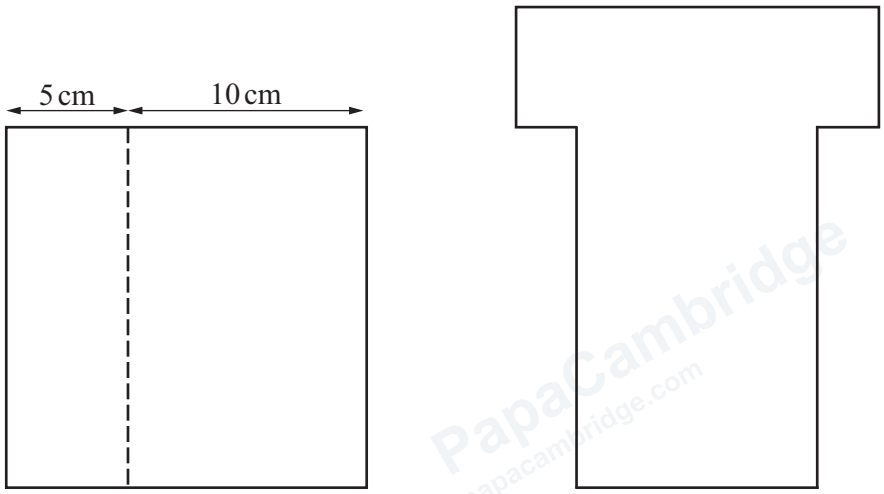

diagram *A*

diagram *B*

NOT TO SCALE

Diagram *A* shows a square of side 15 cm cut into two pieces.
The pieces are rearranged to form diagram *B* with no overlaps.

Find the perimeter of diagram *B*.

..... cm [2]

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8 **(a)** In this sequence the first term and the sixth term are missing.

……, 17, 13, 8, 2, ……

Fill in the first term and the sixth term. [2]

(b) These are the first 4 terms in a different sequence.

$\frac{3}{2}$, $\frac{6}{2}$, $\frac{9}{2}$, $\frac{12}{2}$, ...

Write down the nth term of the sequence.

..... [1]

(c)

Multiply by –2

This is the term-to-term rule for another sequence.
The first term of this sequence is −1.

Write down the next three terms.

−1 ..... , ... , ... , ... [2]

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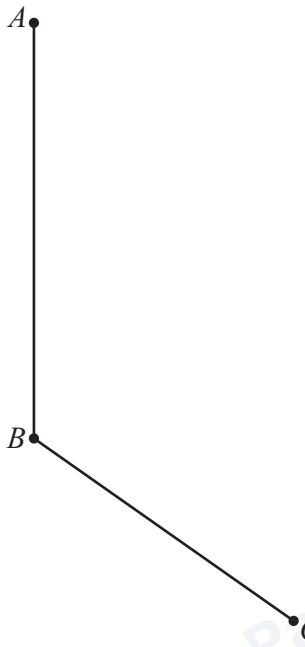
9 The scale drawing shows the positions of three towns, *A*, *B* and *C*.
Town *B* is directly south of town *A*.
The scale is 1 cm represents 40 km.



scale: 1 cm = 40 km

(a) Measure the bearing of town *C* from town *B*.

..... [1]

(b) Work out the actual distance between town *A* and town *B*.

..... km [2]

(c) Town *D* is 300 km from town *A*.
Town *D* is 240 km from town *B*.

Using a ruler and compasses only, construct the position of town *D* on the scale drawing.

[2]

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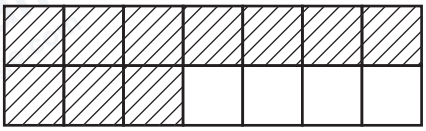
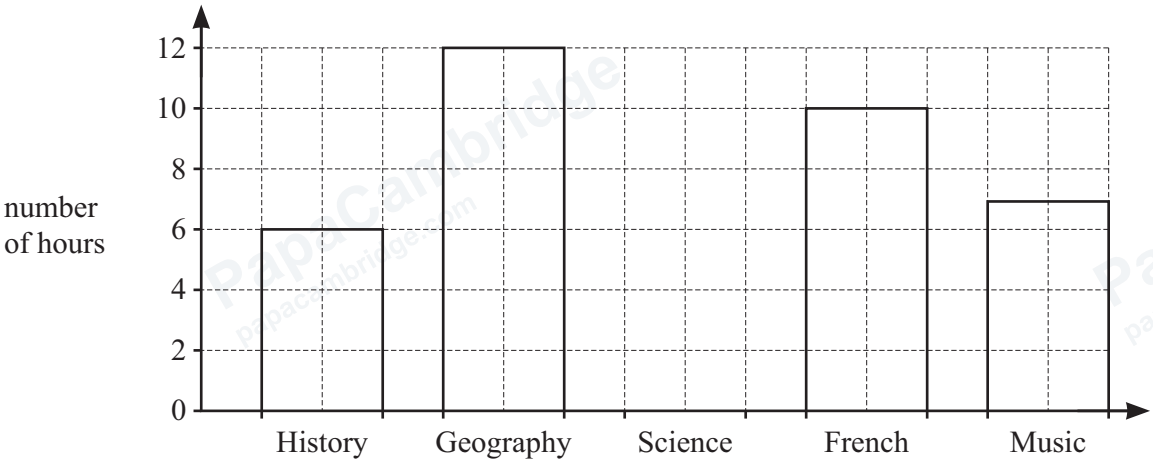


Fill in the box to complete the statement.

The fraction of the rectangle that is shaded is $\frac{\square}{7}$. [1]

11 **(a)** The bar chart shows the number of hours Kim studies some subjects in one week.



Kim studies these 5 subjects for a total of 40 hours.

(i) Complete the bar chart. [2]

(ii) Work out the percentage of the hours Kim studies geography.

..... % [1]

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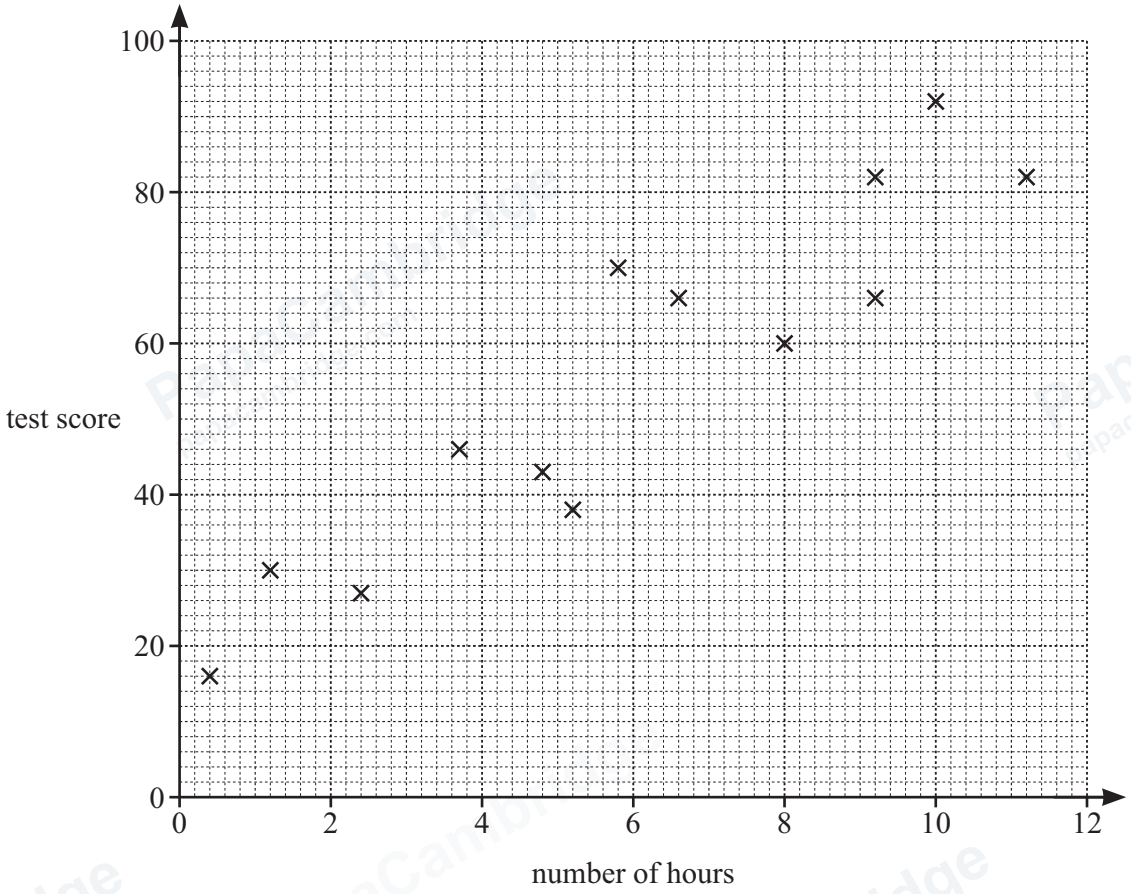
(b) Some students take a history test.
The scatter diagram shows the number of hours each student studies history and their test score.



(i) Sam studies history for 6 hours and scores 56 in the test.

Plot a point on the scatter diagram to represent Sam's data for this test. [1]

(ii) Find the number of people who have a higher test score than Sam.

..... [1]

(iii) Draw a line of best fit on the scatter diagram. [1]

(iv) Use your line of best fit to estimate the test score for another student who studies history for 7 hours.

..... [1]

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12 Simplify.

$9w + 5q - 7w + 3q$

..... [2]

13 Solve.

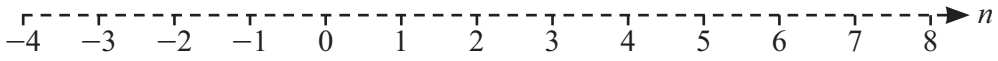
(a) $6 = \frac{32.4}{a}$

$a =$ ..... [2]

(b) $3y - 7 = 5y - 10$

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

14 Represent the inequality $n < 5$ on the number line.



[1]

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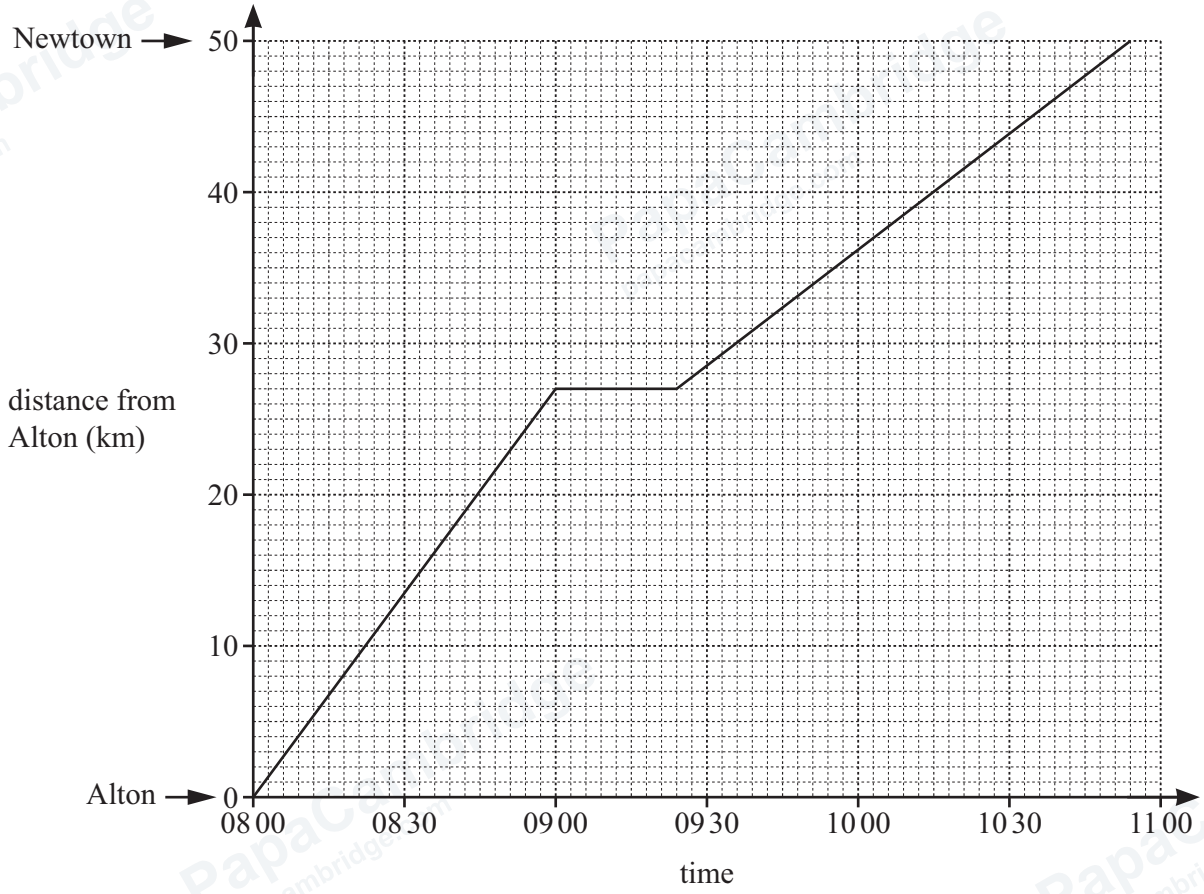
15 Tom leaves Alton at 08 00 and drives to Newtown.
The travel graph shows Tom's journey.



(a) Find how long it takes Tom to reach Newtown.
Give your answer in hours.

..... hours [2]

(b) Find Tom's average speed, in km/h, from Alton to Newtown.

..... km/h [2]

(c) Mei leaves Alton at 08 30 and drives to Newtown at a constant speed of 40 km/h.

(i) Draw a line on the travel graph to show Mei's journey. [1]

(ii) Find the distance between Tom and Mei at 09 00.

..... km [1]

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16 Jo invests $34 500 for 5 years at a rate of 4.4% per year simple interest.

Calculate the total interest earned during the 5 years.

$ ..... [2]

17 The table gives some information about two towns, *A* and *B*.

	population	**area (km^2)**
town *A*	4680	104
town *B*		760

The population density of the two towns is the same.

Calculate the population of town *B*.

$$\left[\text{Population density} = \frac{\text{population}}{\text{area}}\right]$$

..... [3]

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18 A camera costs $735 in Sydney and 435 euros in Rome.
The exchange rate is $1 = 0.58 euros.

Calculate the difference in the cost.
Give your answer in dollars.

$ ..... [3]

19 Calculate the interior angle of a regular polygon with 12 sides.

..... [2]

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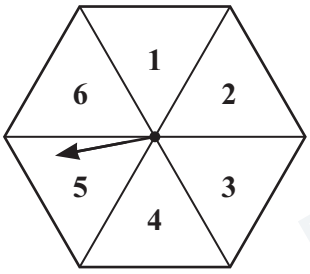
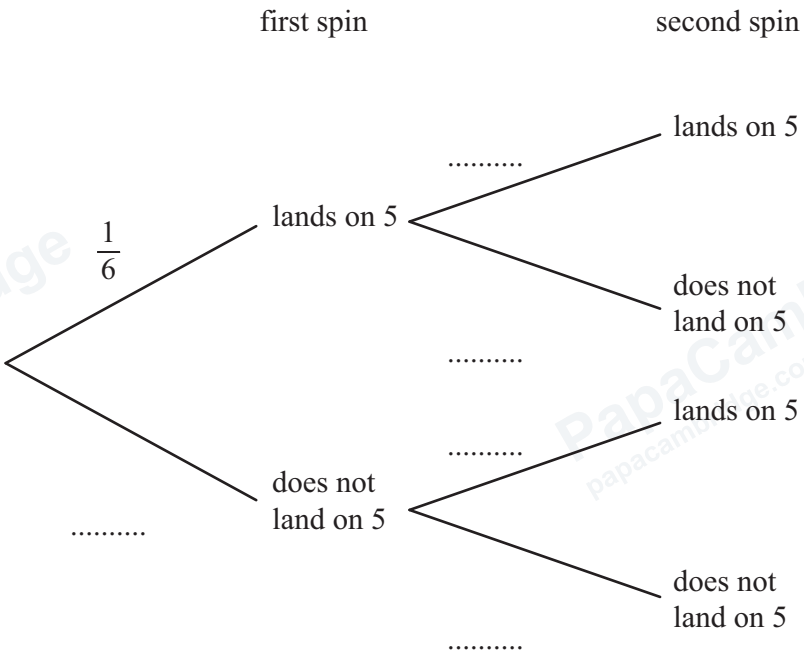
20 The diagram shows a fair spinner.



Azra spins the spinner twice.

(a) Complete the tree diagram.



[2]

(b) Find the probability the spinner lands on 5 both times.

..... [2]

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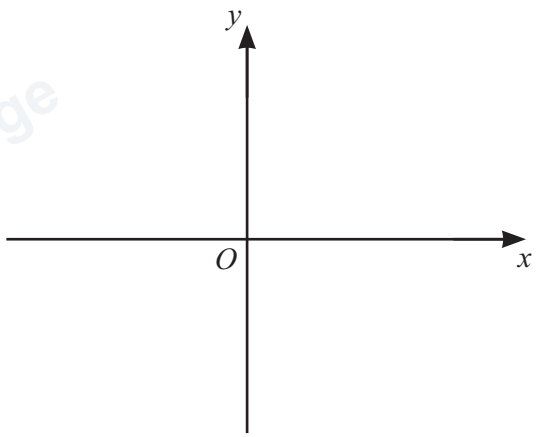
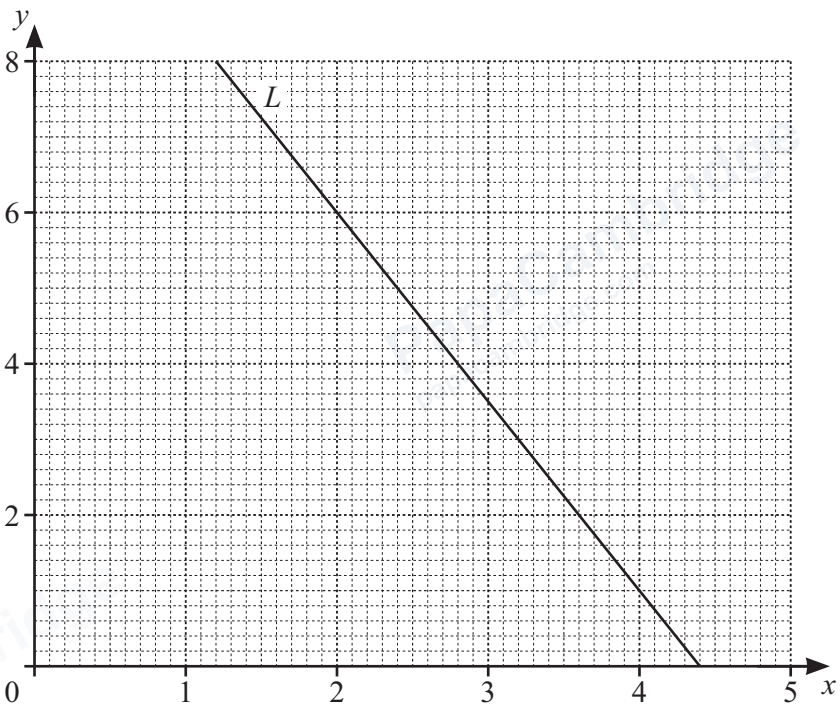
21 (a)



On the diagram, sketch the graph of $y = 3x - 2$. [1]

(b)



Find the gradient of line L.

..... [2]

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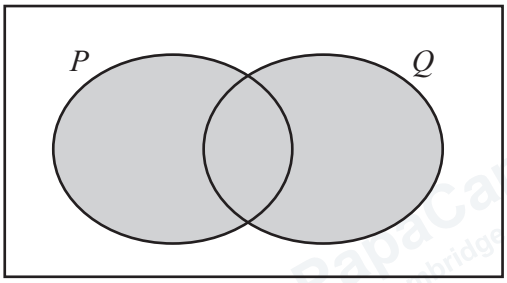
22 (a)



Use set notation to describe the shaded region in the Venn diagram.

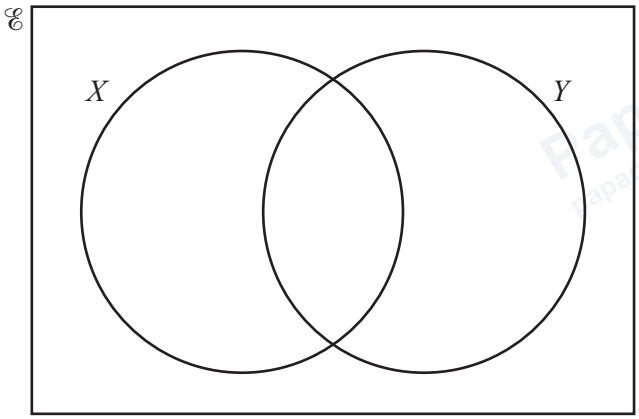
..... [1]

(b) $\mathscr{E} = \{ A, B, E, H, M, O, Q, R, S, U \}$

$X = \{ R, H, O, M, B, U, S \}$

$Y = \{ S, Q, U, A, R, E \}$

(i) Use this information to complete the Venn diagram.



[2]

(ii) List the elements of X'.

..... [1]

(iii) Find $n(X \cap Y)$.

..... [1]

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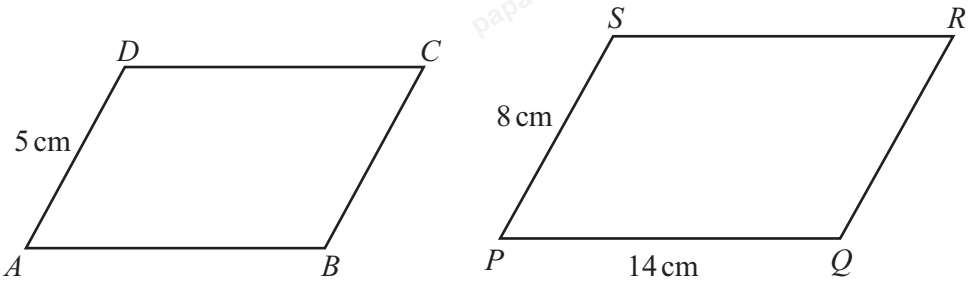

NOT TO SCALE

ABCD is mathematically similar to *PQRS*.

Calculate *AB*.

AB = ... cm [2]

24 **(a)** Write 0.000 571 in standard form.

..... [1]

(b) Calculate $(3.3 \times 10^6) + (12.4 \times 10^5)$.

Give your answer in standard form.

..... [2]

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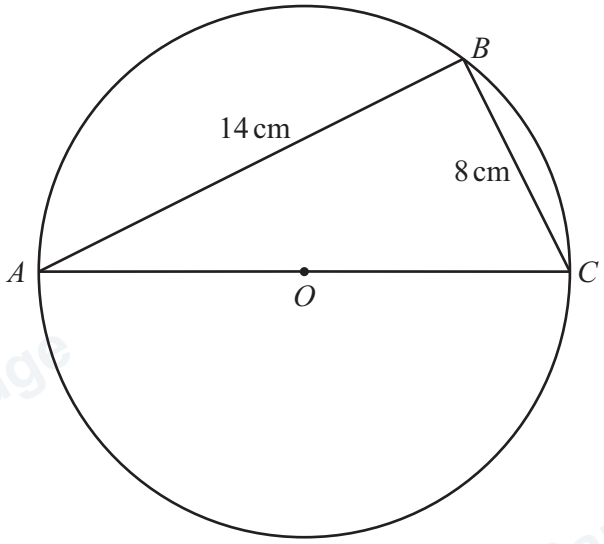

NOT TO SCALE

The diagram shows a circle, centre O and diameter AC.
B is a point on the circumference of the circle.

(a) Give the geometrical reason why angle $ABC = 90°$.

..... [1]

(b) Calculate AC.

$AC =$ ..... cm [2]

(c) Calculate angle BAC.

angle $BAC =$ ..... [2]

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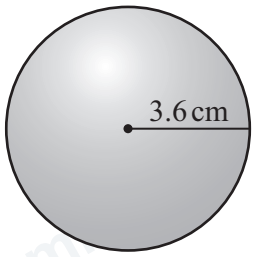
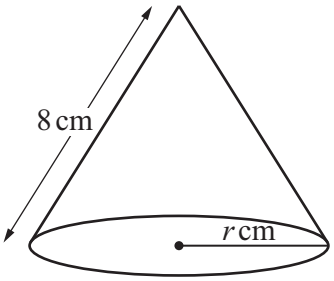
26 The diagram shows a sphere and a cone.





NOT TO SCALE

The radius of the sphere is 3.6 cm.
The radius of the cone is r cm and the slant height is 8 cm.

The surface area of the sphere is equal to the curved surface area of the cone.

Find the value of r.

$r =$ ..... [4]

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