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CAMBRIDGE INTERNATIONAL MATHEMATICS**0607/31**

Paper 3 Calculator (Core)

October/November 2025**1 hour 15 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 graphic display calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly. You will be given marks for correct methods, including sketches, even if your answer is incorrect.
- 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 60.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** 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 .

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





1 Work out.

(a) $\frac{19.4 + 3.8}{2.5}$

..... [1]

(b) $\sqrt[3]{29.791}$

..... [1]

2 Work out 76% of 67.42 .
Give your answer correct to 2 decimal places.

..... [2]

3 (a) Write these numbers in order of size, starting with the smallest.

43.9%

0.44

$\frac{3}{7}$

..... , , [1]
smallest

(b) Write down a number between 0.6 and 0.7 .

..... [1]

4 (a) Write 13 708 in words.

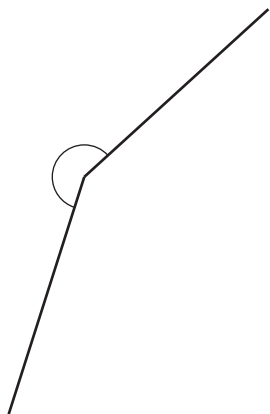
..... [1]

(b) Write twenty million, seven hundred and forty thousand in figures.

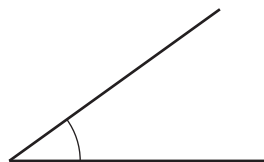
..... [1]



- 5 (a) Complete the mathematical name for each angle.



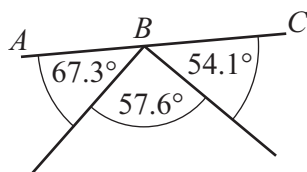
..... angle



..... angle

[2]

- (b)

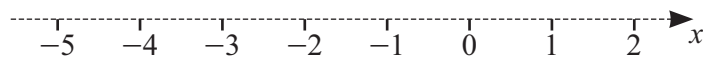


NOT TO
SCALE

Show that ABC is **not** a straight line.

[2]

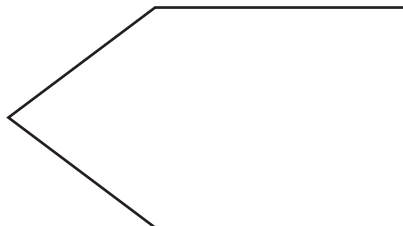
- 6 Show the inequality $-3 \leq x < 1$ on the number line.



[2]

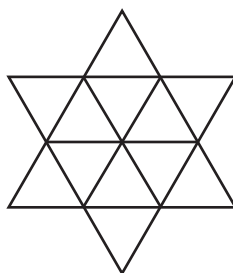


- 7 (a) On the diagram, draw the line of symmetry.



[1]

- (b) The diagram has 12 small identical triangles.



Shade 6 small triangles to make a pattern with rotational symmetry of order 6.

[1]

- 8 (a) A rectangle has length 4.5 cm and width 2.8 cm.

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

..... [2]

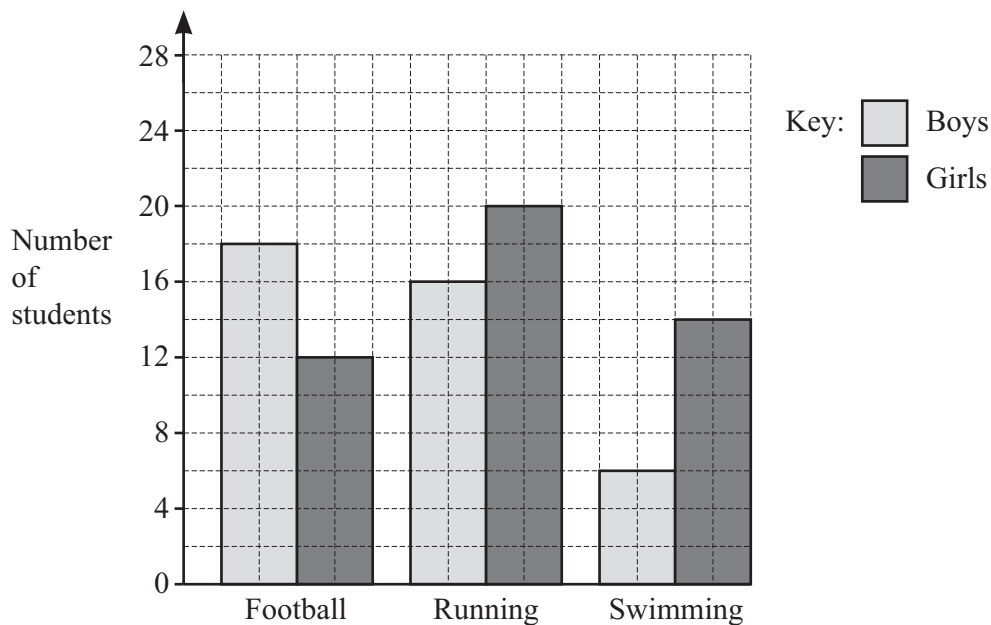
- (b) The perimeter of an equilateral triangle is 18.3 cm.

Work out the length of one side of the triangle.

..... cm [1]



- 9 The bar chart shows the favourite sport of each student in a sports group.



- (a) Work out the difference between the total number of boys and the total number of girls.

..... [2]

- (b) One of these students is chosen at random.

Work out the probability that this student's favourite sport is football.

..... [2]

- 10 Expand and simplify.

$$4(7x + 1) + 3(5x + 4)$$

..... [2]

- 11 A is the point $(-3, 6)$ and B is the point $(2, 8)$.

Find the coordinates of the midpoint of AB .

(.....,) [2]



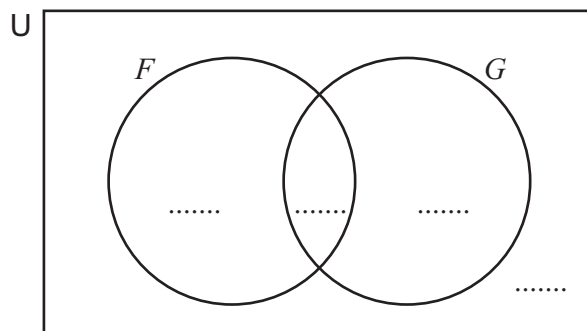
- 12 (a) There are 80 students in year 10.

9 students study both French (F) and German (G).

35 students study French only.

2 students do not study French and do not study German.

- (i) Complete the Venn diagram.

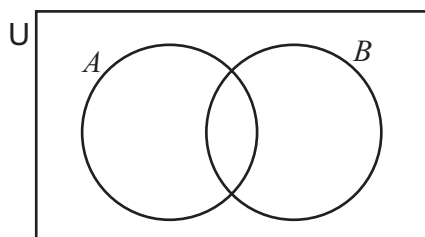


[2]

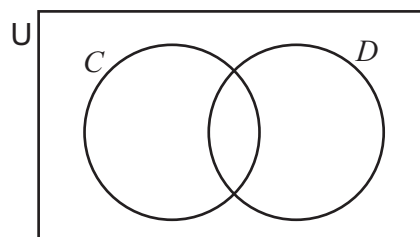
- (ii) Find $n(G)$.

..... [1]

- (b) Shade the region indicated for each Venn diagram.



$A \cap B$



$(C \cup D)'$

[2]

- 13 A square spinner is numbered 1, 2, 3, 4.

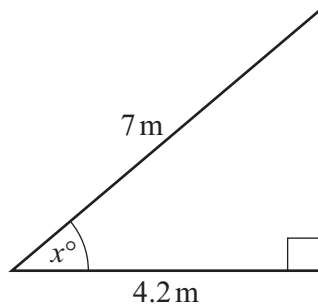
The table shows the probability of the spinner landing on each number.

Number	1	2	3	4
Probability	0.37		0.1	0.26

Complete the table.

[2]

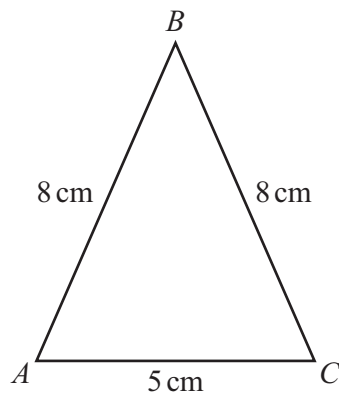




NOT TO
SCALE

Work out the value of x .

$x =$ [2]



NOT TO
SCALE

ABC is an isosceles triangle.
 $AB = BC = 8$ cm and $AC = 5$ cm.

Use Pythagoras' theorem to calculate the height of the triangle.

..... cm [3]





- (a) The input is 10.

Work out the output.

..... [1]

- (b) The output is 19.

Work out the input.

..... [1]

- (c) The input is x .

- (i) Write an expression for the output.

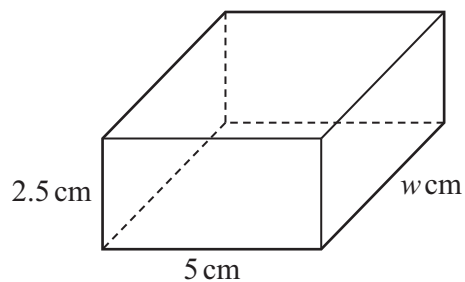
..... [1]

- (ii) The input is the same as the output.

Work out the input.

..... [2]





NOT TO
SCALE

The cuboid has volume 90 cm^3 .

Work out the value of w .

$w = \dots\dots\dots$ [2]

18 (a) Write $0.000\,09$ in standard form.

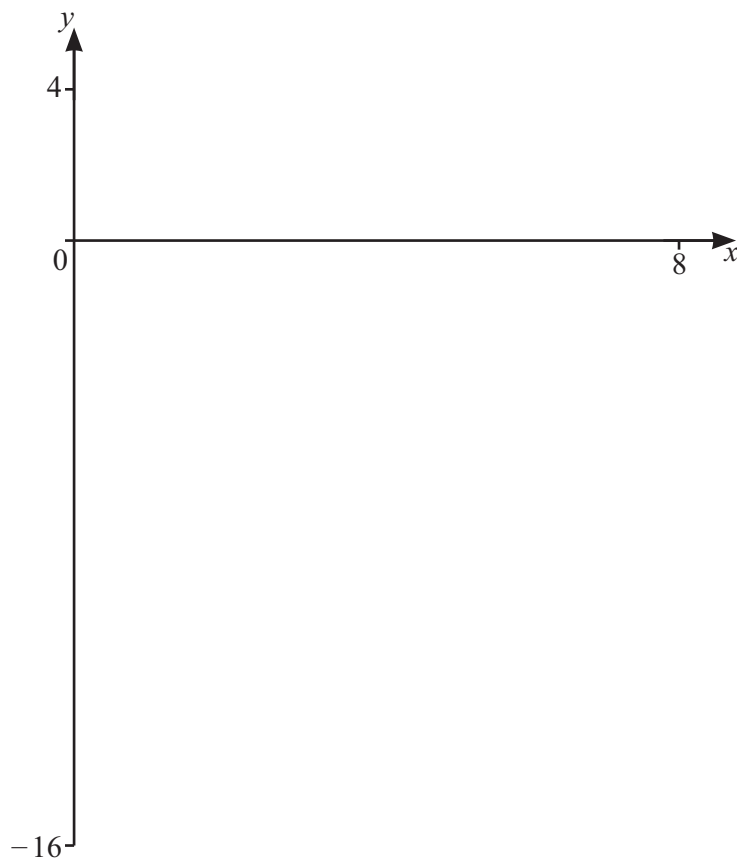
$\dots\dots\dots$ [1]

(b) Work out $(4.1 \times 10^3) \times (3.7 \times 10^5)$.

Give your answer in standard form.

$\dots\dots\dots$ [2]





(a) On the diagram, sketch the graph of $y = (3 - x)(x - 5)$ for values of x between 0 and 8. [2]

(b) Write down the x -coordinate of each point where the graph crosses the x -axis.

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

(c) Find the coordinates of the point where the graph crosses the y -axis.

($\dots\dots\dots$, $\dots\dots\dots$) [1]

(d) Find the coordinates of the local maximum.

($\dots\dots\dots$, $\dots\dots\dots$) [1]

Question 20 is printed on the next page.



- 20 (a) Hannah invests \$5350 at a rate of 2.6% per year compound interest.

Calculate the value of Hannah's investment at the end of 3 years.

\$ [2]

- (b) Connor invests \$1750 at a rate of $x\%$ per year simple interest.
At the end of 4 years, the value of the investment is \$1939.

Find the value of x .

$x =$ [3]

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