Cambridge Assessment International Education

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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.

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[Turn over

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) $\dfrac{19.4+3.8}{2.5}$

..... [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]

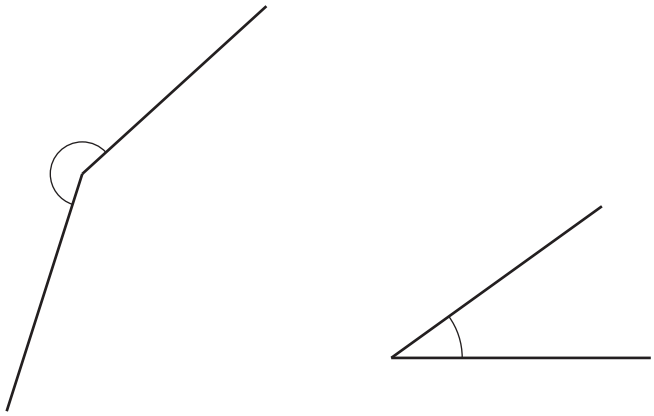
4 **(a)** Write 13 708 in words.

..... [1]

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

..... [1]

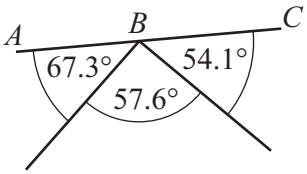
5 **(a)** Complete the mathematical name for each angle.



..... angle ..... angle

[2]

(b)

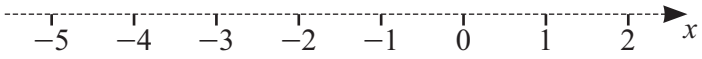


NOT TO SCALE

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

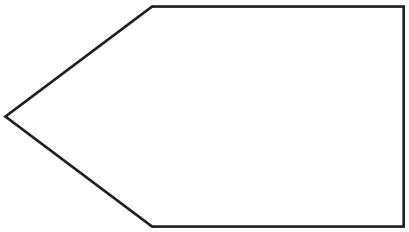
[2]

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



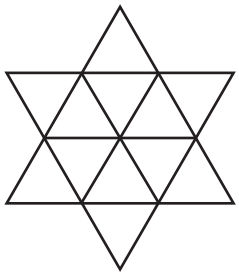
[2]

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.

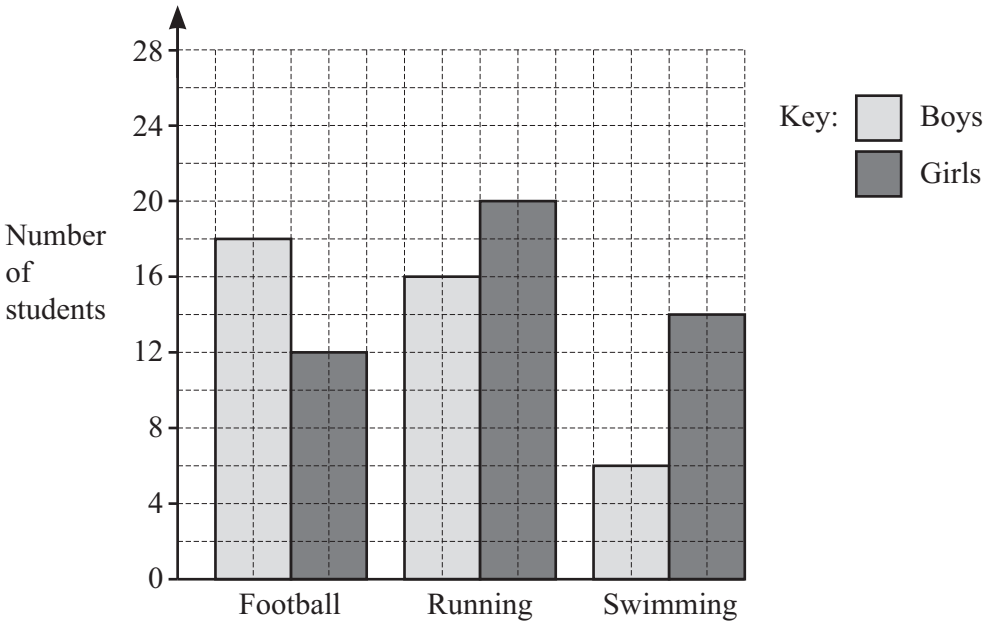
.... [2]

(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 $(2, 8)$.

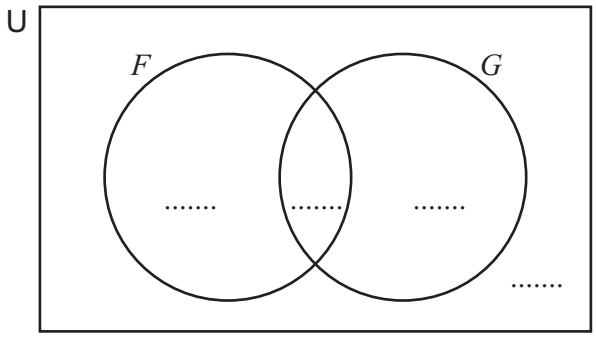
Find the coordinates of the midpoint of AB.

(..... , ...) [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.

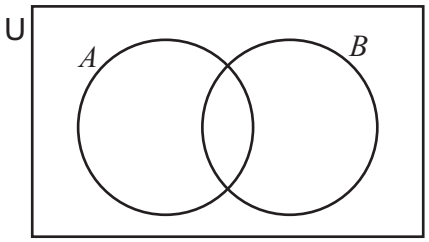


[2]

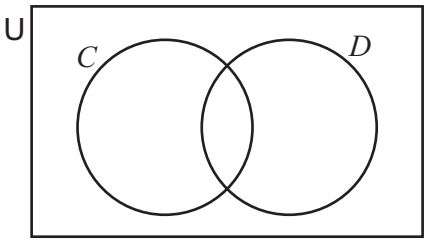
(ii) Find n(G).

..... [1]

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



$A \cap B$



$(C \cup D)'$

[2]

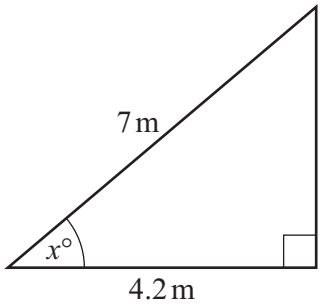
13 A square spinner is numbered 1, 2, 3, 4.
The table shows the probability of the spinner landing on each number.

Number	1	2	3	4
Probability	0.37		0.1	0.26

Complete the table.

[2]

14

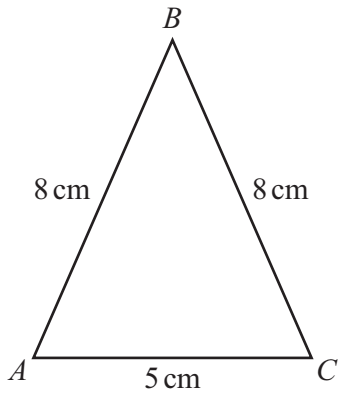


NOT TO SCALE

Work out the value of x.

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

15



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]

16

(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.

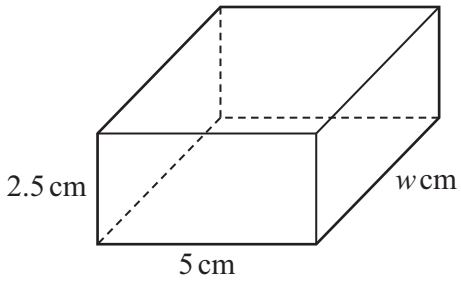
..... [1]

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

Work out the input.

..... [2]

17



NOT TO SCALE

The cuboid has volume $90\,\text{cm}^3$.

Work out the value of w.

$w =$ ..... [2]

18 **(a)** Write 0.000 09 in standard form.

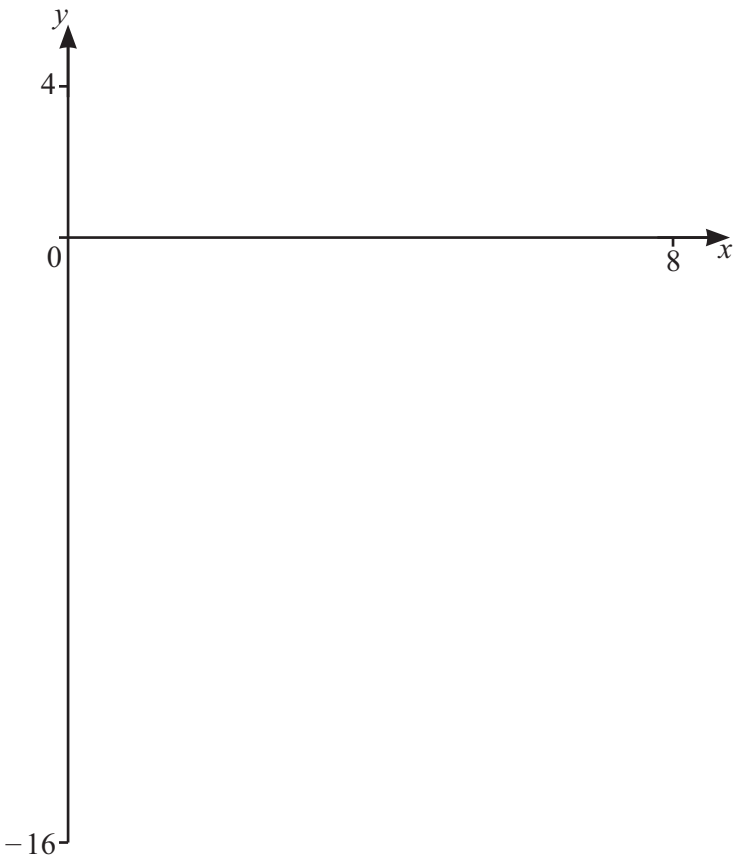
..... [1]

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

Give your answer in standard form.

..... [2]

19



(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.

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

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

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

(d) Find the coordinates of the local maximum.

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