GradeMax

* 0000800000001 * DFD

Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

6771883828

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.

DC (CE/SG) 342429/7
© UCLES 2025

[Turn over

GradeMax

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

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

* 0000800000003 * DFD

DO NOT WRITE IN THIS MARGIN

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]

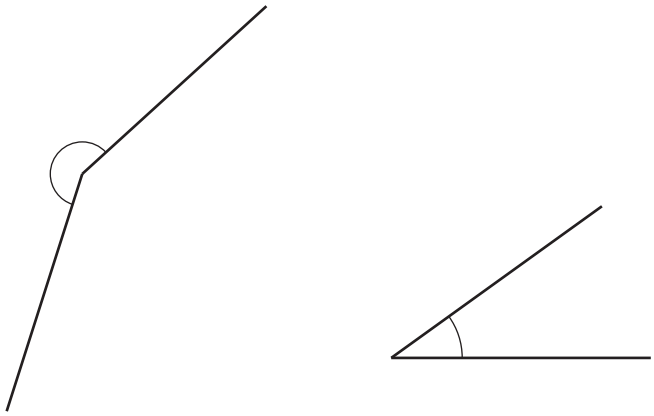
(b) Write twenty million, seven hundred and forty thousand in figures.

..... [1]

© UCLES 2025

[Turn over

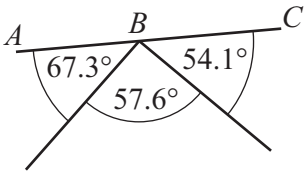
5 **(a)** Complete the mathematical name for each angle.



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

[2]

(b)

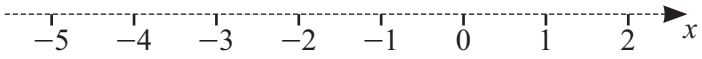


NOT TO SCALE

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

[2]

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

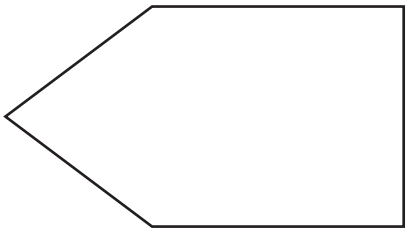


[2]

DO NOT WRITE IN THIS MARGIN

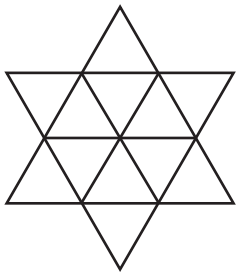
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

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]

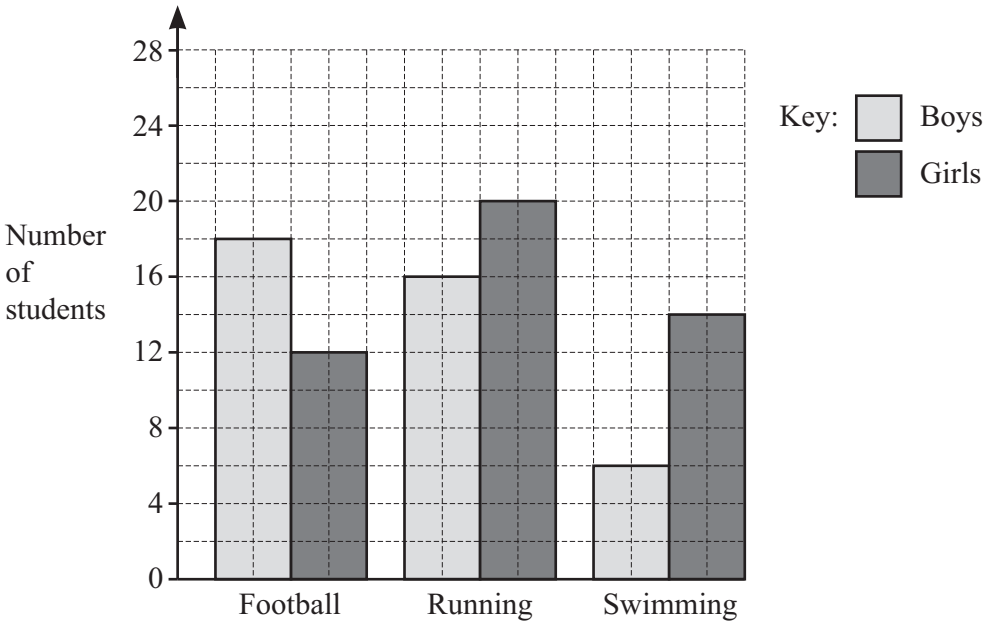
(b) The perimeter of an equilateral triangle is 18.3 cm.

Work out the length of one side of the triangle.

..... cm [1]

GradeMax

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]

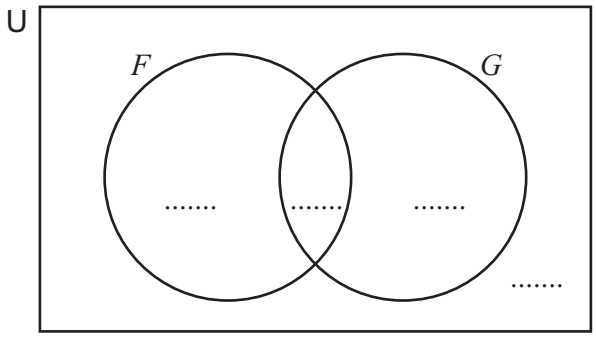
DO NOT WRITE IN THIS MARGIN

GradeMax

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.

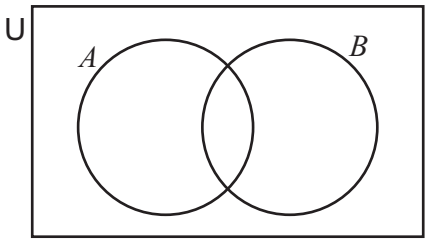


[2]

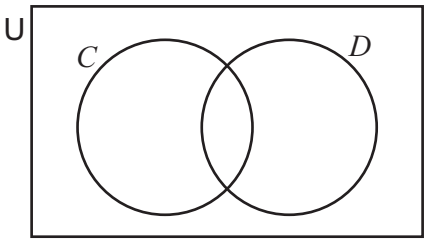
(ii) Find n(G).

..... [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.

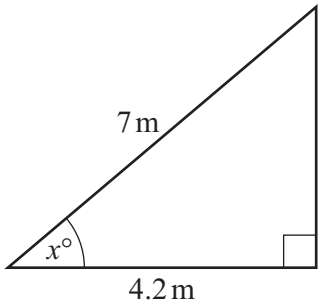
Number	1	2	3	4
Probability	0.37		0.1	0.26

Complete the table.

[2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

14

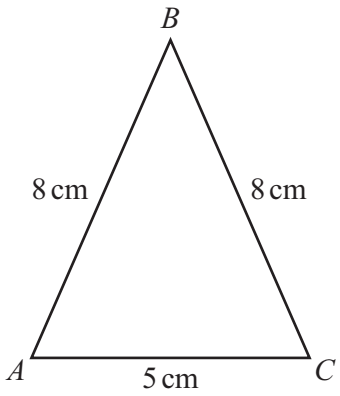


NOT TO SCALE

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]

© UCLES 2025

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

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]

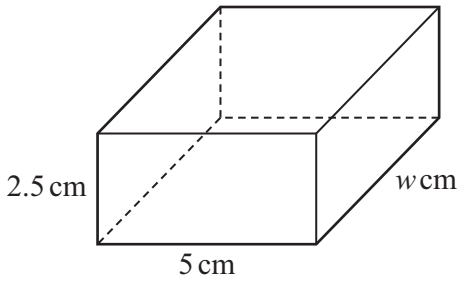
(ii) The input is the same as the output.

Work out the input.

..... [2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

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]

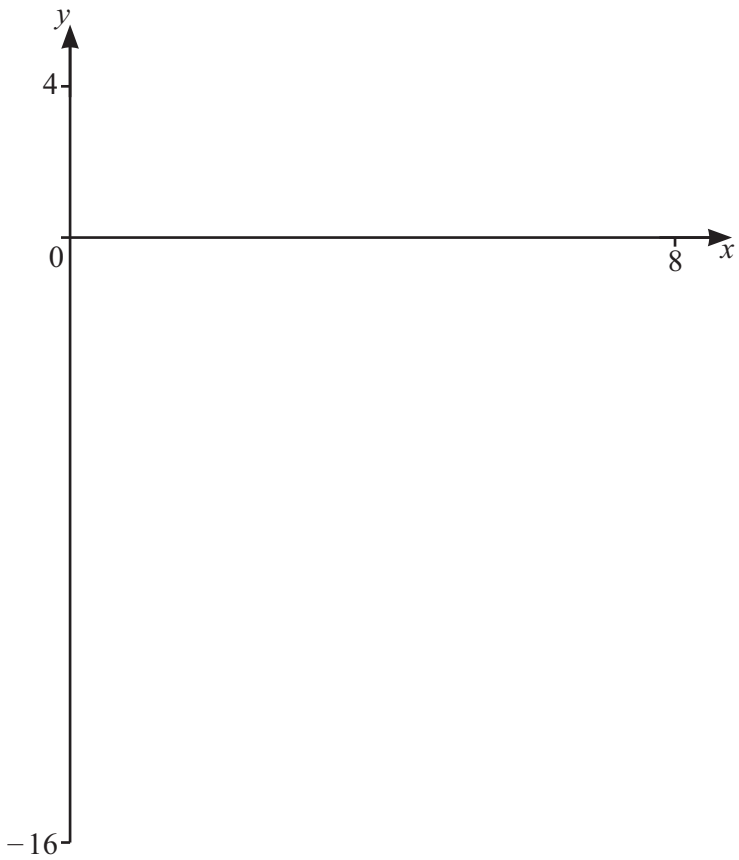
(b) Work out $(4.1 \times 10^3) \times (3.7 \times 10^5)$.

Give your answer in standard form.

..... [2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

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.

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

GradeMax

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]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.