GradeMax

* 0000800000001 * DFD

Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

2608722783

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/23**

Paper 2 Non-calculator (Extended) **October/November 2025**

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.
- Calculators must **not** be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly. You will be given marks for correct methods even if your answer is incorrect.

INFORMATION

- The total mark for this paper is 75.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **16** pages.

DC (DE/SW) 347091/2
© UCLES 2025

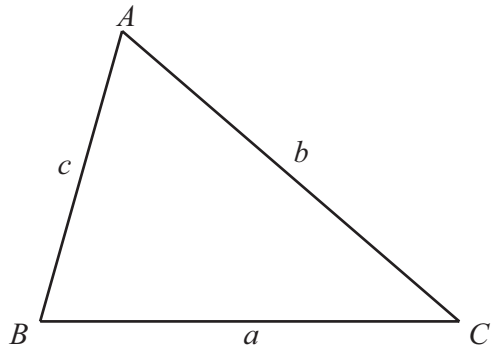
[Turn over

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.	$V = \frac{4}{3}\pi r^3$
For the equation $ax^2 + bx + c = 0$, where $a \neq 0$,	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

For the triangle shown,



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc\cos A$$

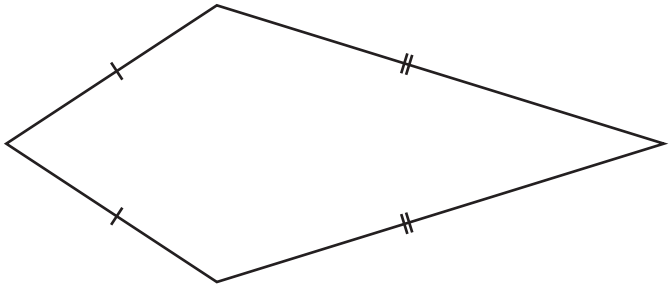
$$\text{Area} = \frac{1}{2}ab\sin C$$

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

Calculators must **not** be used in this paper.

1



(a) Write down the mathematical name of this quadrilateral.

..... [1]

(b) Draw any lines of symmetry in the quadrilateral. [1]

2 Solve.

$7x + 3 = 3$

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

3 A train journey starts at 22 35 and takes 2 hours 30 minutes.

(a) Find the time this train journey ends.

..... [1]

(b) The distance of the journey is 200 km.

Work out the average speed of the train.

..... km/h [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

GradeMax

4 Factorise.

$5t - 15t^2$

..... [2]

5 Work out.

$5\frac{1}{2} \times 1\frac{1}{11}$

..... [2]

6 These are the first 5 terms of a sequence.

$T_1 = 29 \qquad T_2 = 23 \qquad T_3 = 17 \qquad T_4 = 11 \qquad T_5 = 5$

(a) Find T_6.

..... [1]

(b) Find T_n.

..... [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

7 $\mathrm{U} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$

$A = \{\text{odd numbers}\}$
$B = \{\text{square numbers}\}$

(a) Find $A \cap B$.

..... [1]

(b) Find $\mathrm{n}(B')$.

..... [1]

8 The interior angle of a regular polygon is 168°.

Work out the number of sides of this polygon.

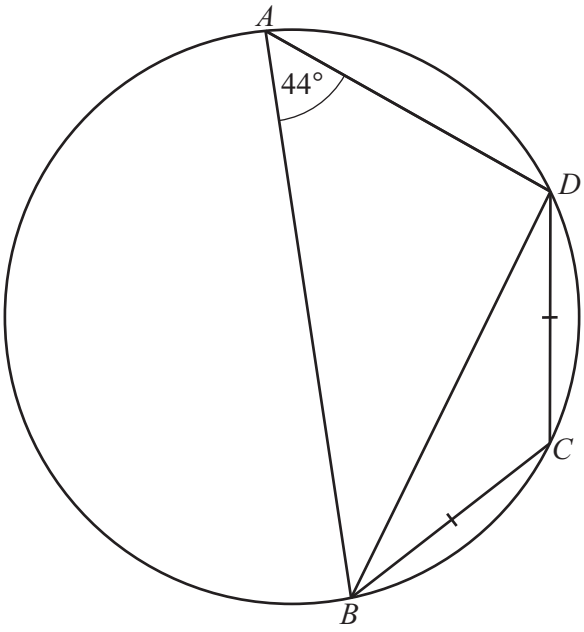
..... [2]

9 Find the value of $81^{-\frac{3}{4}}$.

..... [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

10



NOT TO SCALE

A, B, C, and D lie on the circle.
$BC = CD$.

(a) Work out angle CDB.

Angle CDB = ... [2]

(b) Explain why the line AC bisects angle BAD.

.....

..... [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

GradeMax

11 **(a)** Work out $(5.7\times10^{17})\times(2\times10^{19})$.
Give your answer in standard form.

..... [2]

(b) Work out $(5.7\times10^{17})+(2\times10^{19})$.
Give your answer in standard form.

..... [2]

12 **(a)** Simplify $(x^3)^3$.

..... [1]

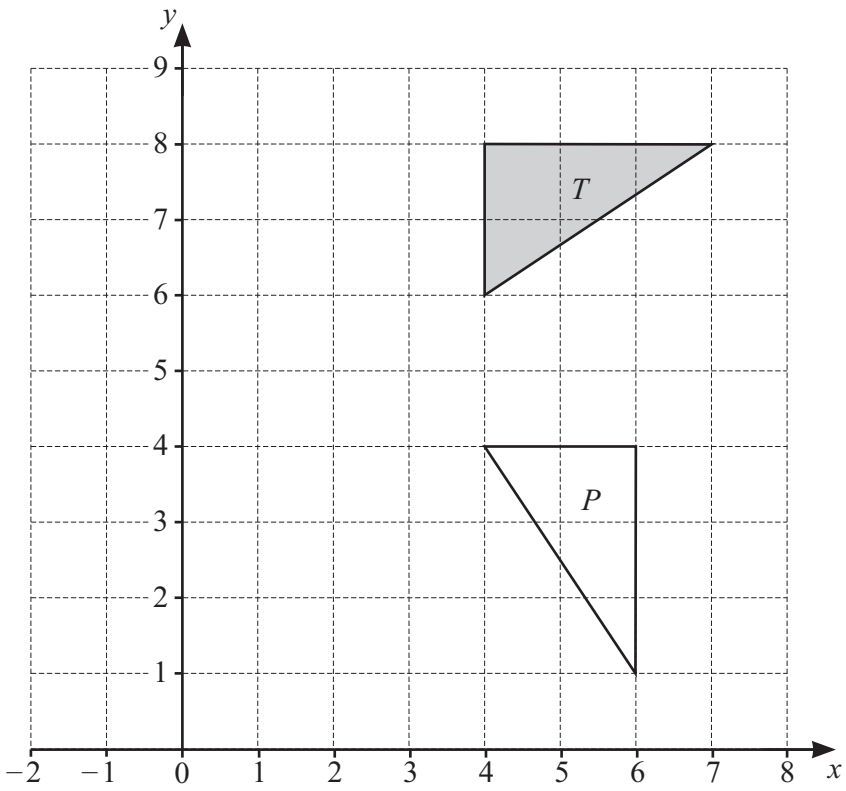
(b) Find the value of y when $2^{-y}=4^{3-y}$.

$y =$ ..... [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

GradeMax

13



(a) Translate triangle T by the vector $\begin{pmatrix} -5 \\ -3 \end{pmatrix}$. [2]

(b) Describe fully the **single** transformation that maps triangle T onto triangle P.

.....

..... [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

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 A is the point (3, 1) and B is the point (9, 9).

(a) Find the length of AB.

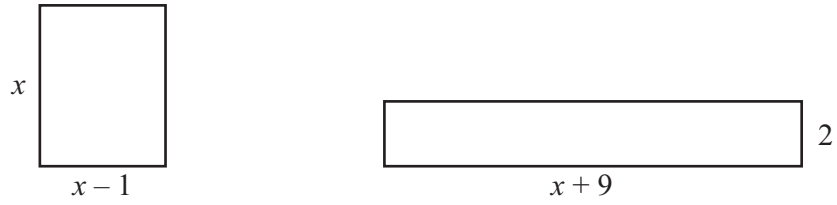
$AB =$ ..... [3]

(b) C is the point (5, −3).
Line L passes through A and the midpoint of BC.

Find the equation of line L.
Give your answer in the form $y = mx + c$.

$y =$ ..... [4]

15



NOT TO SCALE

The areas of the two rectangles are equal.

(a) Show that $x^2 - 3x - 18 = 0$.

[2]

(b) Factorise $x^2 - 3x - 18$.

..... [2]

(c) Find the difference between the perimeters of the two rectangles.

..... [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

GradeMax

16 Rationalise the denominators.

(a) $\frac{5}{\sqrt{7}}$

..... [1]

(b) $\frac{1}{2-\sqrt{2}}$

..... [2]

17 The solutions to the equation $x^2 + bx + c = 0$ are $-1 \pm \sqrt{5}$.

Find the value of b and the value of c.

$b =$ .....

$c =$ .....

[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

GradeMax

18 $f(x) = 5 - 3x$ $g(x) = \log x$

(a) Find f(3).

..... [1]

(b) Find $f^{-1}(x)$.

$f^{-1}(x) =$ ..... [2]

(c) Find $gf\left(-\frac{5}{3}\right)$.

..... [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

* 0000800000013 * DFD

19 Write as a single fraction in its simplest form.

$$\frac{5}{2x-3} - \frac{x}{x+1}$$

..... [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

GradeMax

20 Janette travels to school by train.

The probability that the train is late on any day is $\frac{1}{5}$.

(a) Work out the number of days the train is expected to be late during a school term of 50 days.

..... [1]

(b) The train is not late for n consecutive days and is late on the next day.

The probability that this happens is $\frac{64}{625}$.

Find the value of n.

$n =$ ..... [2]

(c) Work out the probability that the train is late on only one day during a week of 5 school days.

..... [2]

DO NOT WRITE IN THIS MARGIN

GradeMax

(d) On any day, when the train is late, the probability that Janette is late for school is $\frac{3}{4}$.

Find the probability that the train is late and Janette is **not** late for school.

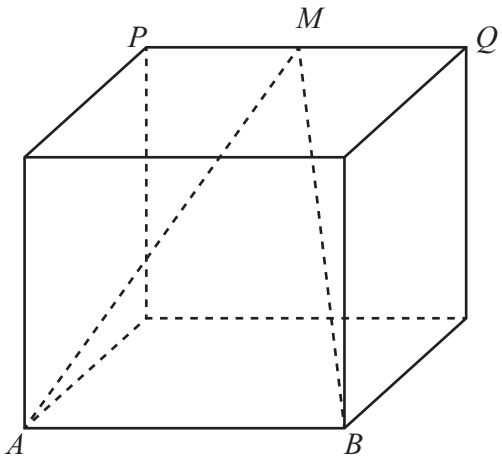
..... [2]

Question 21 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

21



NOT TO SCALE

The diagram shows a cube of side length $2x$.
M is the midpoint of PQ.
The perimeter of triangle $AMB = kx$.

Find the value of k.

$k =$ ..... [4]

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.

© 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