Cambridge Assessment International Education

Cambridge IGCSE™

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/41**

Paper 4 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.
- 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 75.
- The number of marks for each question or part question is shown in brackets [ ].

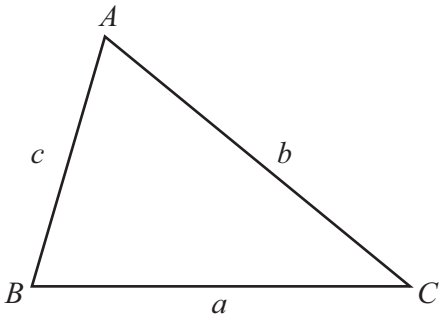
This document has **16** pages. Any blank pages are indicated.

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



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

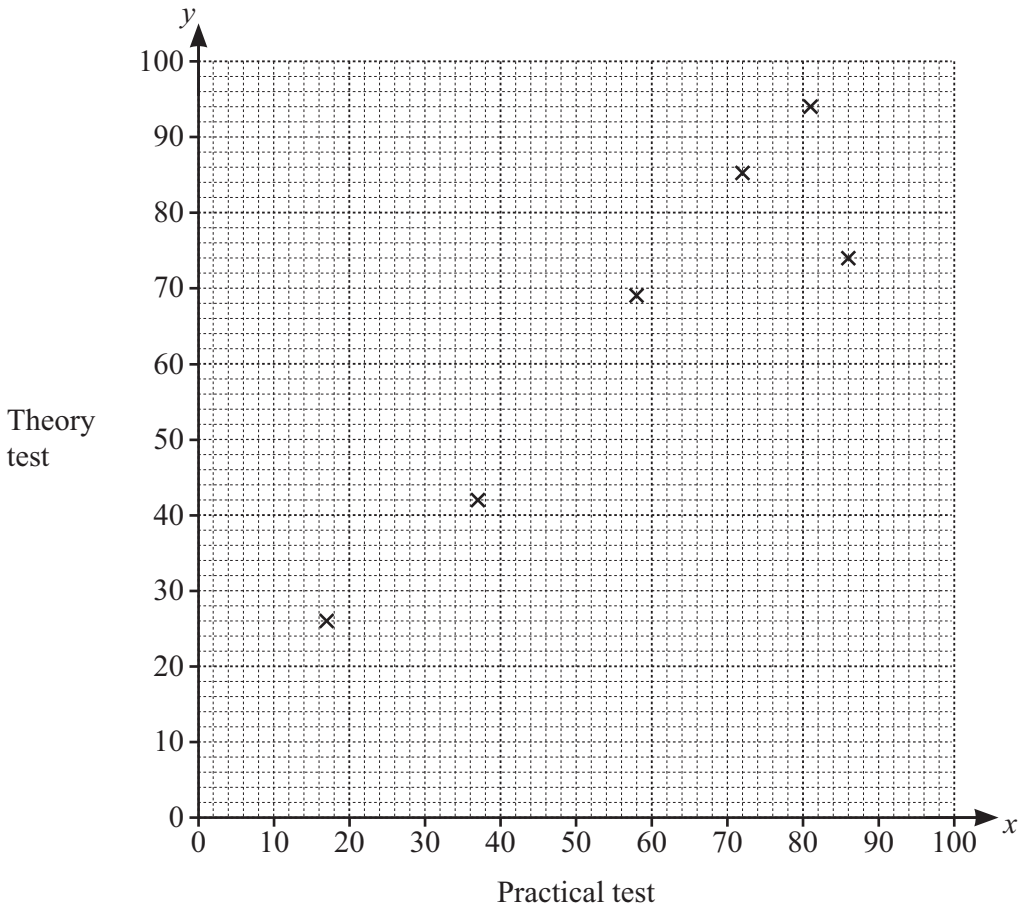
$$a^2 = b^2 + c^2 - 2bc\cos A$$

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

1 An examination has two parts: a practical test and a theory test.
These are the results for ten people.

Practical test (x)	37	81	58	86	72	17	72	28	51	65
Theory test (y)	42	94	69	74	85	26	68	34	49	69

(a) Complete the scatter diagram.
The first 6 points have been plotted for you.



[2]

(b) What type of correlation is shown on the scatter diagram?

..... [1]

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

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

(d) Bruno scored 57 in the practical test.

Use your answer to **part (c)** to estimate Bruno's score for the theory test.

..... [1]

2 Work out $\dfrac{5.3^2 - \sqrt{4.56}}{1.27}$.

..... [1]

3 In France, the price of a phone is 310 euros.
In Dubai, the price of the same phone is 1185 dirhams.
The exchange rate is 1 euro = 3.95 dirhams.

Find the difference between the two prices.
Give your answer in euros.

..... euros [2]

4 Aisha is paid $17.50 per hour.
Aisha's pay is increased to $19.30 per hour.

Calculate the percentage increase in Aisha's pay.

..... % [2]

5 Solve.

$$5 - 2x > 3x + 7$$

..... [2]

6 **(a)** Jeanne invests \$2000 at a rate of 3.5% per year simple interest.

Calculate the interest earned at the end of 8 years.

\$ ..... [2]

(b) Karim invests \$2000 at a rate of 2.8% per year compound interest.

Calculate the interest earned at the end of 10 years.

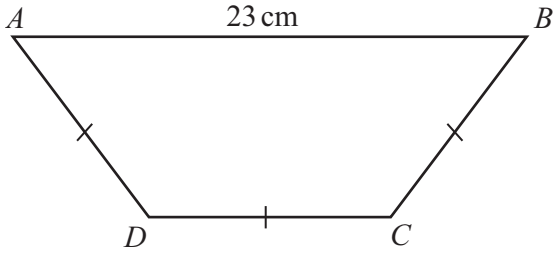
\$ ..... [3]

(c) Lauren invests \$2000 at a rate of 3.1% per year compound interest.
At the end of n years, the value of the investment is \$3066.56 correct to the nearest cent.

Calculate the value of n.

$n =$ ..... [4]

7



NOT TO SCALE

The diagram shows a trapezium, $ABCD$.
$AD = DC = CB$ and $AB = 23$ cm.
The perimeter of the trapezium is 62 cm.

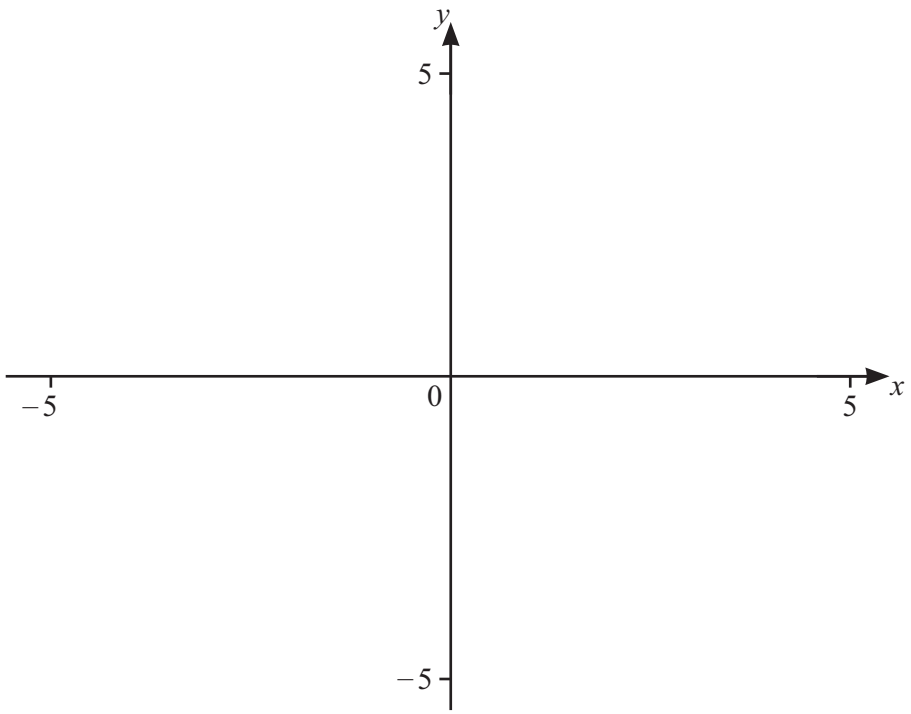
(a) Calculate the area of the trapezium.

..... cm^2 [5]

(b) Calculate angle BAD.

Angle BAD = ... [2]

8



$$f(x) = \frac{2^x}{x+2}$$

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

(b) Find the coordinates of the local minimum.

(..... , ...) [2]

(c) Solve $f(x) = 3$.

..... [2]

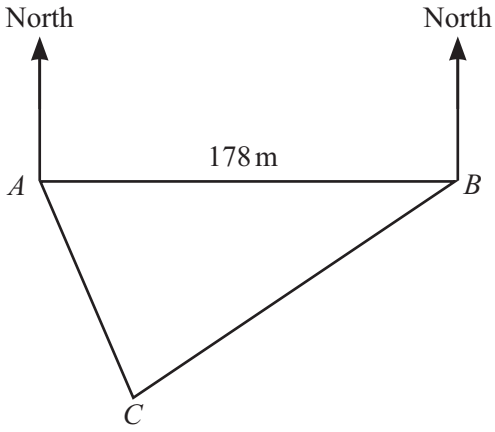
(d) Write down a value of k for which $f(x) = k$ has only one solution.

..... [1]

(e) Find the range of values of k for which $f(x) = k$ has no solutions.

..... [2]

9



NOT TO SCALE

ABC is a field on level ground.
B is 178 m due east of *A*.
The bearing of *C* from *A* is 158°.
The bearing of *C* from *B* is 237°.

(a) Calculate the length of *CB*.

..... m [4]

(b) Calculate the area of the field *ABC*.

..... m^2 [2]

10 y is inversely proportional to x^3.
When $x = 2$, $y = 2.5$.

(a) Find y in terms of x.

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

(b) Find the value of x when $y = 20000$.

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

(c) p is directly proportional to y^2.
When $x = \sqrt[3]{2}$, $p = 1200$.

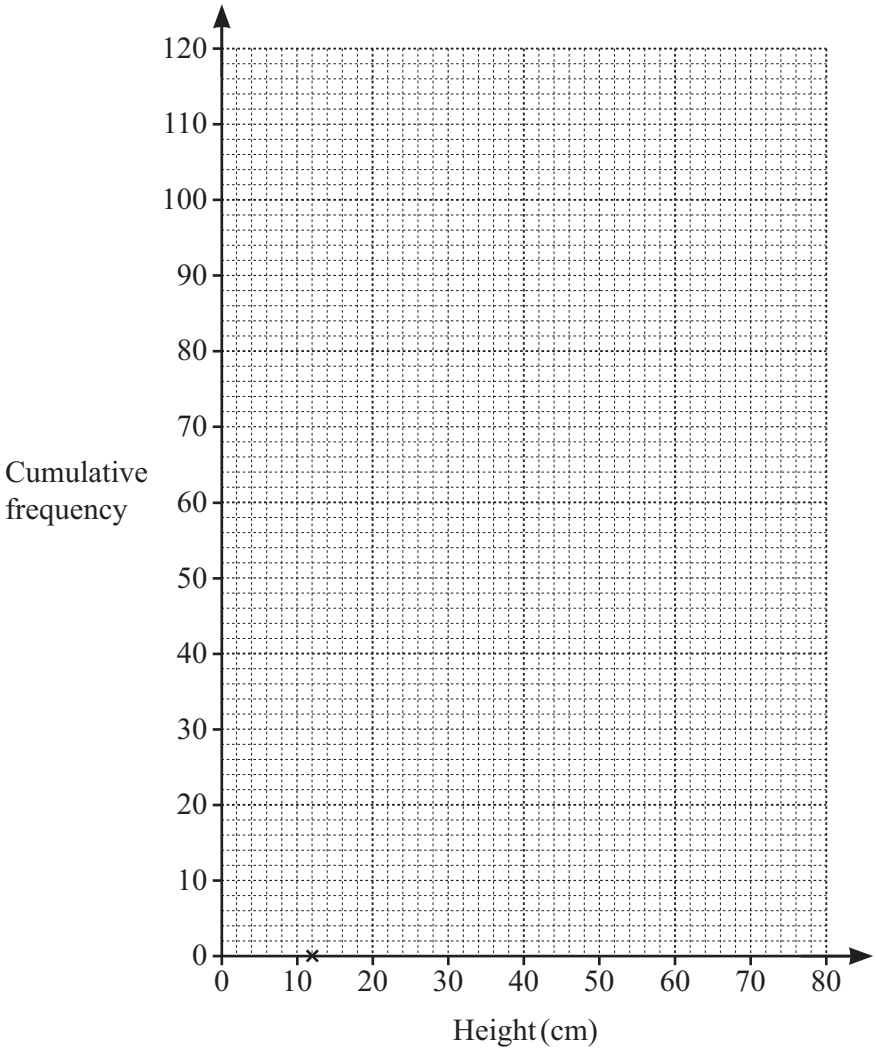
Find p in terms of x.

$p =$ ..... [3]

11 The table shows some information about the heights, in cm, of 120 plants.
All of these plants have a height greater than 12 cm.

Maximum	80
Median	48
Lower quartile	34
Interquartile range	26

Use this information to draw a cumulative frequency diagram.
The first point has been plotted for you.



[3]

12 Transformation A is a rotation 90° clockwise about the origin.

Transformation B is a translation by the vector $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$.

Describe fully the **single** transformation equivalent to transformation A followed by transformation B.
You may use the grid to help you.

.....

..... [3]

13 A is the point $(-3, 2)$ and B is the point $(7, -3)$.

(a) Find the equation of the line AB.

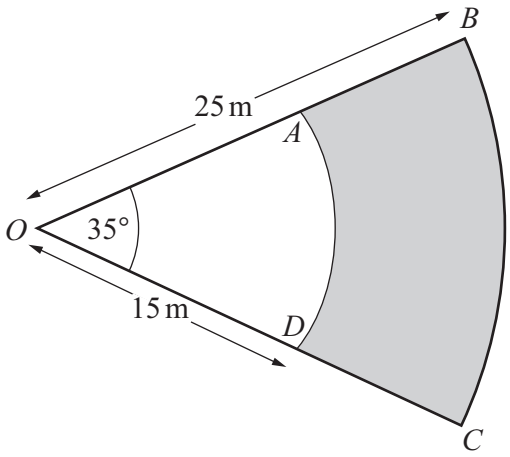
..... [3]

(b) C is a point on AB, and the ratio $AC : CB = 3 : 2$.

Find the coordinates of C.

(..... , ...) [2]

14



NOT TO SCALE

OAD and *OBC* are sectors of circles each with centre *O*.
The sector angle is 35°.
The radius of the smaller circle is 15 m.
The radius of the larger circle is 25 m.

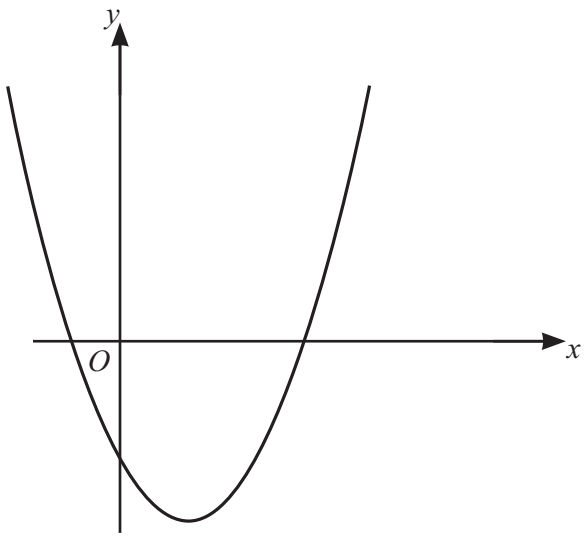
(a) Calculate the area of the shaded region.

..... m^2 [3]

(b) Calculate the perimeter of the shaded region.

..... m [4]

15



NOT TO SCALE

The diagram shows a sketch of the graph of a quadratic function $y = f(x)$.
The graph passes through $(-1, 0)$, $(3, 0)$ and $(0, -6)$.

(a) Find $f(x)$.

$f(x) =$ ..... [3]

(b) The graph of $y = f(x)$ is mapped onto the graph of $y = g(x)$ by a translation vector $\begin{pmatrix} 1 \\ 0 \end{pmatrix}$.

Find $g(x)$ in terms of x.

$g(x) =$ ..... [2]

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