Cambridge Assessment International Education

Cambridge IGCSE™

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

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. Any blank pages are indicated.

DC (CJ/SW) 347089/3

[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. $V = \frac{1}{3}Ah$

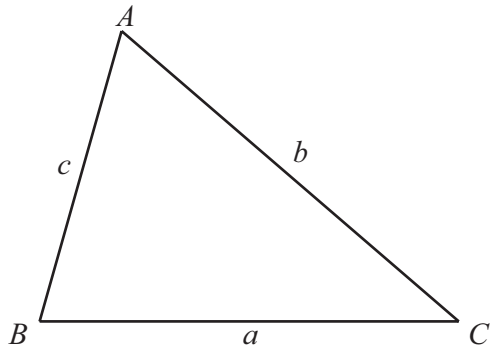
Volume, V, of cylinder of radius r, height h. $V = \pi r^2 h$

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,



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

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

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

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

1 Work out.

(a) $5 - 4 \times 3$

..... [1]

(b) $(0.3)^4$

..... [1]

(c) $\sqrt{1\frac{7}{9}}$

..... [2]

2 Factorise.

$$9xy - 2x^2y^3$$

..... [2]

3 Convert 390 mm into m.

..... m [1]

4 Write 10.0283 correct to 3 significant figures.

..... [1]

5 The table shows the favourite sports of 40 students.

Sport	Football	Netball	Running	Swimming	Tennis
Frequency	8	5	11	10	6

(a) Write down the modal sport.

..... [1]

(b) Find the relative frequency of football.

..... [1]

(c) The information in the table is to be shown on a pie chart.

Find the sector angle for tennis.

..... [2]

6 The cost of 5 burgers and 4 packets of fries is $20.40 .
The cost of 1 packet of fries is $1.10 .

Find the cost of 1 burger.

$ ..... [3]

7 Find the next term and the *n*th term in this sequence.

82, 74, 66, 58, 50, …

next term = ...

*n*th term = ...
[3]

8 A right-angled triangle has sides 6 cm, 12 cm and x cm.

Find the possible values of x.
Give your answers in simplest surd form.

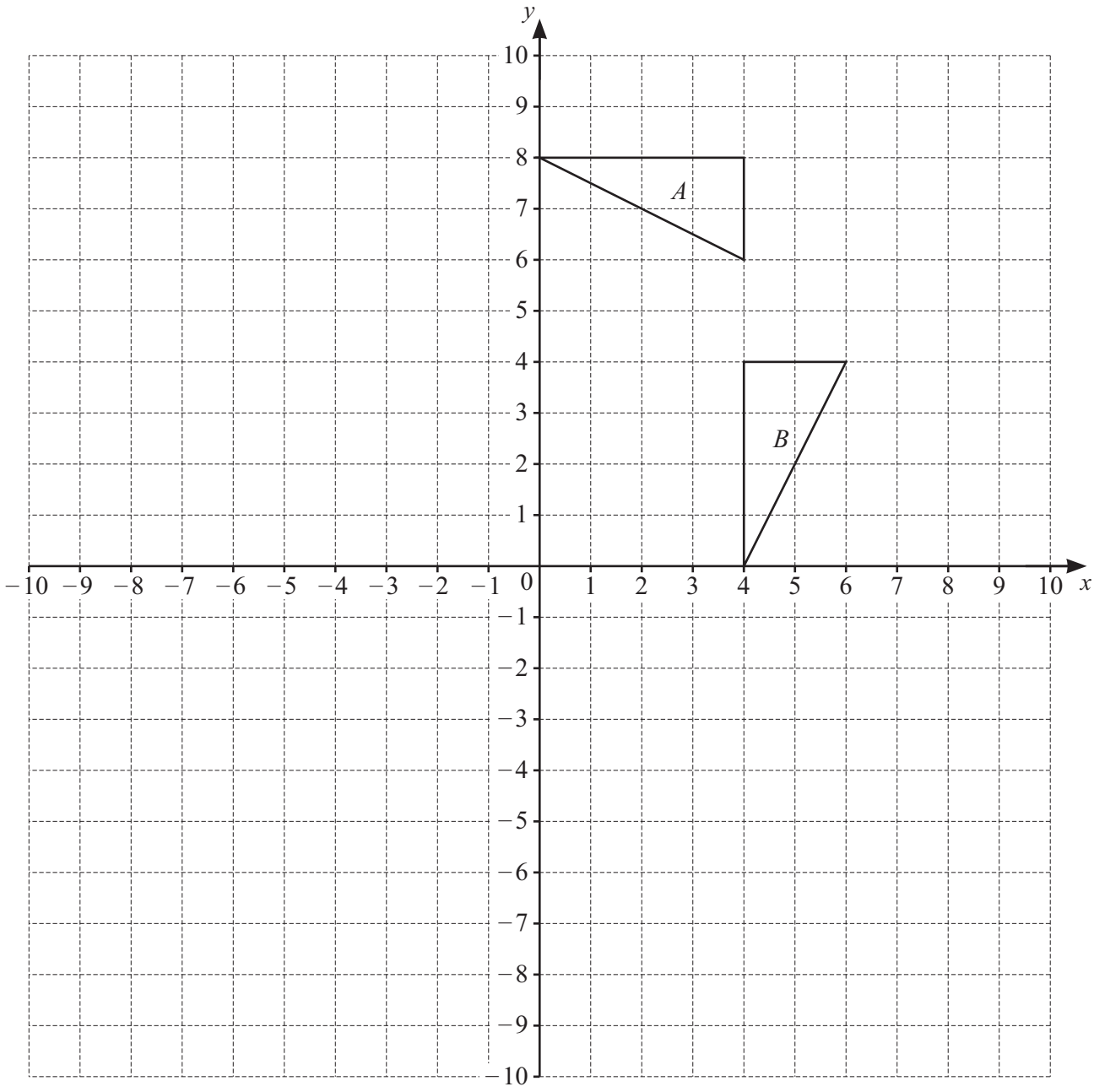
..... [4]

9 Mia walks 11 km in $1\frac{1}{2}$ hours.
She then runs at an average speed of 12 km/h for 15 minutes.

Work out Mia's average speed for the whole journey.
Give your answer in km/h.

..... km/h [3]

10



(a) Reflect triangle A in the line $x = -1$. Label the image C. [2]

(b) Translate triangle B by the vector $\begin{pmatrix} -8 \\ -4 \end{pmatrix}$. Label the image D. [2]

(c) Describe fully the **single** transformation that maps triangle A onto triangle B.

.....

..... [3]

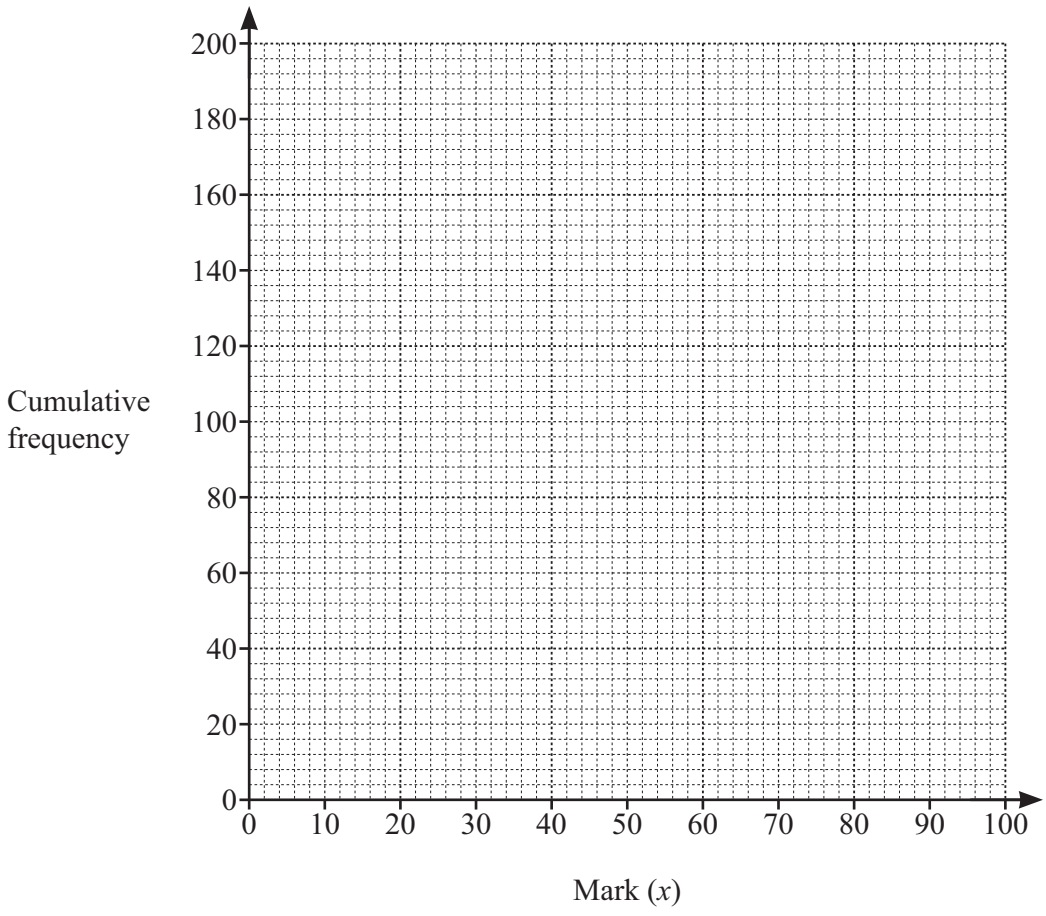
11 Write 0.010 02 in standard form.

..... [1]

12 The cumulative frequency table shows the marks, x, of 200 students in a mathematics exam.

Mark (x)	Cumulative Frequency
$x \leqslant 20$	22
$x \leqslant 30$	40
$x \leqslant 40$	64
$x \leqslant 50$	110
$x \leqslant 60$	144
$x \leqslant 80$	172
$x \leqslant 100$	200

(a) On the grid, draw a cumulative frequency diagram to represent the data.



[3]

(b) Use your graph in **part (a)** to find an estimate for the interquartile range.

..... [2]

(c) 14% of students are graded A.

Find the minimum mark for a student to be graded A.

..... [2]

13 Solve the simultaneous equations.

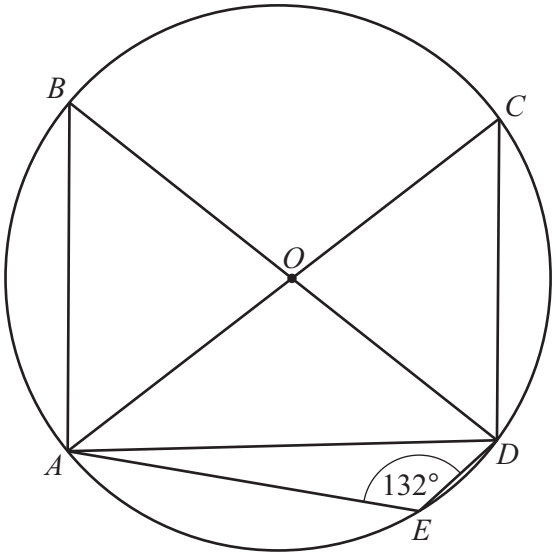
$$\frac{1}{2}x - 3y = 27$$
$$3x + 2y = 2$$

$x =$ .....

$y =$ .....

[4]

14



NOT TO SCALE

A, B, C, D and E lie on a circle, centre O.
AC and BD are diameters of the circle.
Angle $AED = 132°$.

(a) Find

(i) angle ABD

Angle $ABD =$ ..... [1]

(ii) angle AOD

Angle $AOD =$ ..... [1]

(iii) angle ADB

Angle $ADB =$ ..... [1]

(iv) angle DCA.

Angle $DCA =$ ..... [1]

(b) Write down two triangles that are congruent.

..... [1]

15 The graph of $y = (x+h)^2 + k$ has a vertex at $(-3, -2)$.

Find the value of h and the value of k.

$h =$ .....

$k =$ .....
[2]

16 Rationalise the denominator.
Give your answer in its simplest form.

$$\frac{12}{\sqrt{7}+2}$$

..... [3]

17 Write the list of numbers in order, starting with the smallest.

$\cos 60°$ $\quad \frac{\pi}{2} \quad$ $\tan 45°$ $\quad \sqrt{0.81}$

..... < ..... < ..... < ..... [2]
smallest

18 The point A has coordinates $(-2, 7)$ and the point B has coordinates $(6, 3)$.

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

$y =$ ..... [5]

19 $f(x) = 4^{2x}$

Solve the equation $f(x) = 1$.

$x =$ ..... [1]

20 **(a)** Factorise $4x^2 - 4x - 3$.

..... [2]

(b) Solve $4x^2 - 4x - 3 = 0$.

$x =$ ..... or $x =$ ..... [1]

(c) Solve $4(\cos x)^2 - 4\cos x - 3 = 0$ for $0° < x < 360°$.

$x =$ ..... or $x =$ ..... [3]

21 Simplify.

$$\frac{9-3x}{x^2-9}$$

..... [3]

22 Make r the subject of $A+4r=r^2+4$.

$r =$ ..... [4]

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