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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.

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 .

$$V = \frac{1}{3}\pi r^2 h$$

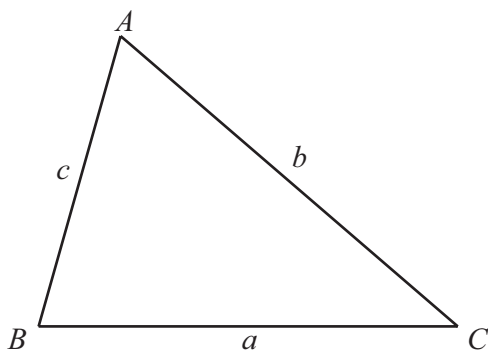
Volume, V , of sphere of radius r .

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

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,



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

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

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



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]



DO NOT WRITE IN THIS MARGIN

- 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]

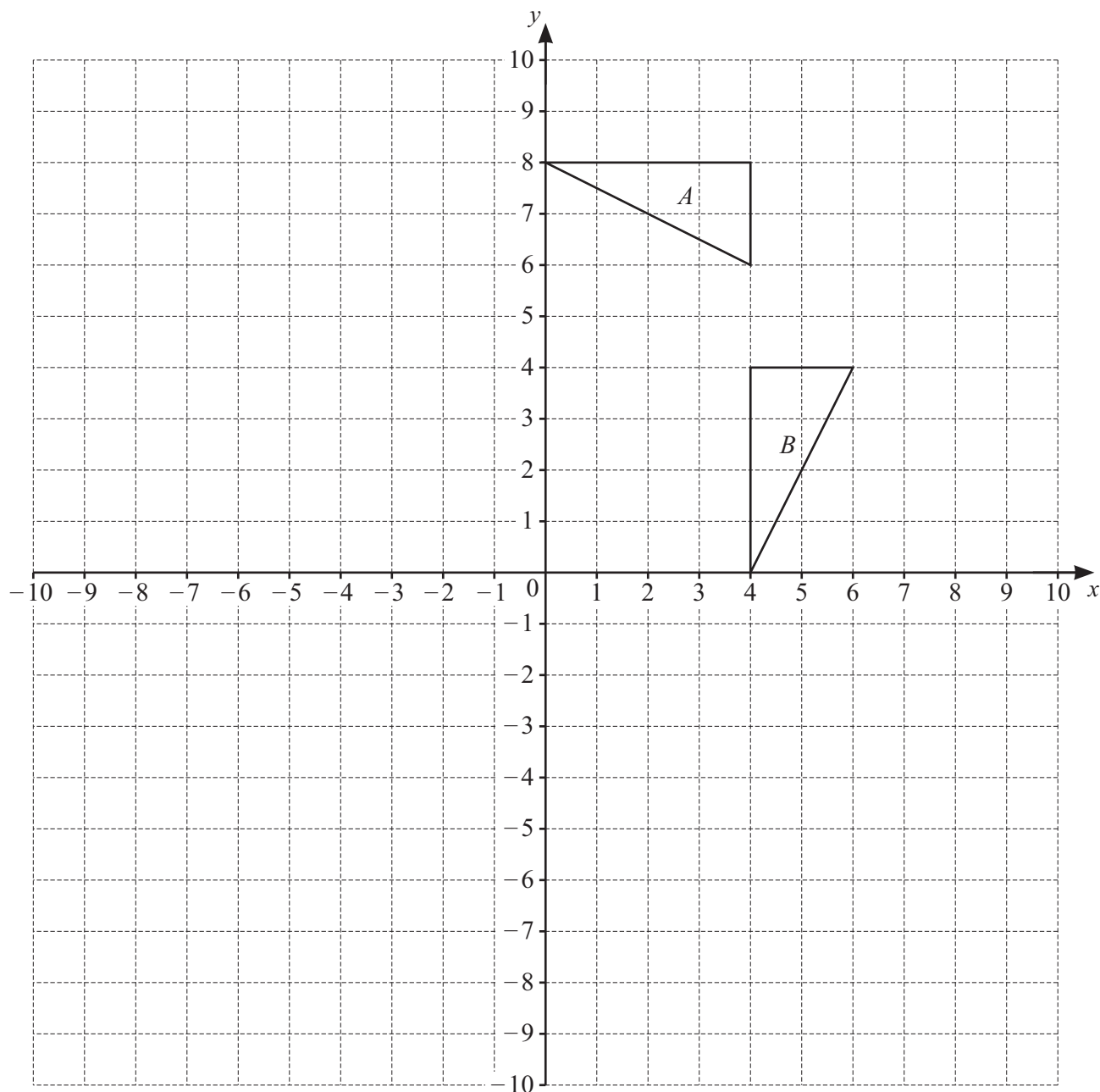
- 9 Mia walks 11 km in $1\frac{1}{2}$ hours.
She then runs at an average speed of 12 km/h for 15 minutes.

Work out Mia's average speed for the whole journey.

Give your answer in km/h.

..... km/h [3]





- (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]



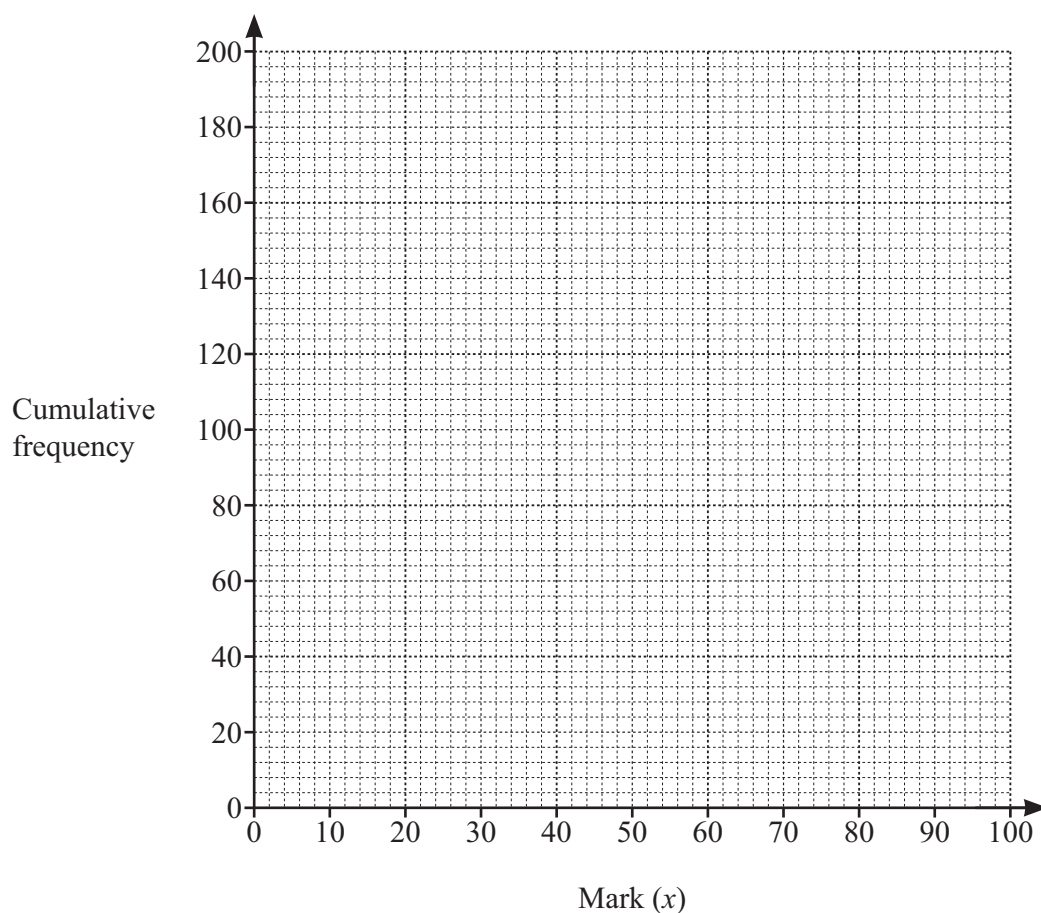
11 Write 0.010 02 in standard form.

..... [1]

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

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

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

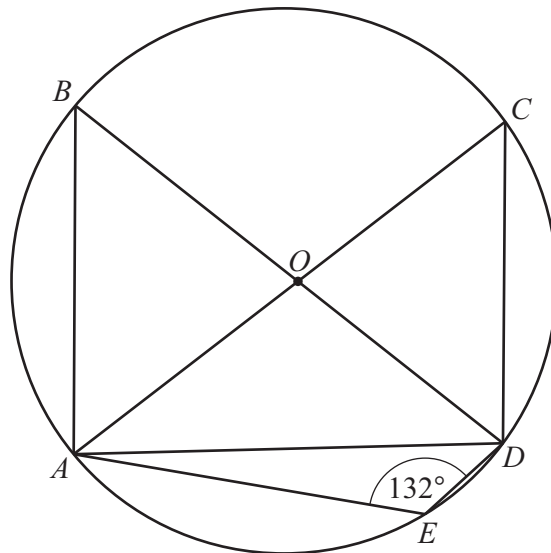
$$3x + 2y = 2$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

[4]



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

(a) Find

(i) angle ABD Angle $ABD = \dots\dots\dots$ [1](ii) angle AOD Angle $AOD = \dots\dots\dots$ [1](iii) angle ADB Angle $ADB = \dots\dots\dots$ [1](iv) angle DCA .Angle $DCA = \dots\dots\dots$ [1]

(b) Write down two triangles that are congruent.

 $\dots\dots\dots$ [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 .

$$h = \dots\dots\dots$$

$$k = \dots\dots\dots [2]$$

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

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

$$\dots\dots\dots [3]$$

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

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

$$\dots\dots\dots < \dots\dots\dots < \dots\dots\dots < \dots\dots\dots [2]$$

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 $y = mx + c$.

$y = \dots\dots\dots$ [5]

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

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

$x = \dots\dots\dots$ [1]



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

..... [2]

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

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [1]

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

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [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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