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CAMBRIDGE
International Education

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CANDIDATE NAME

CENTRE NUMBER

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2462421924

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 Non-calculator (Extended) **May/June 2026**

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. Do **not** use correction fluid or tape.
- 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 **12** pages.

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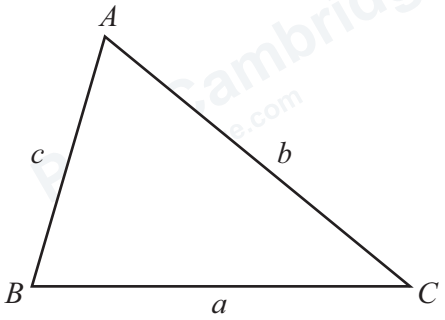
List of formulas

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,



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

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

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

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

1 Write $\frac{31}{7}$ as a mixed number.

..... [1]

2 Write 30% as a fraction.

..... [1]

3 Write down the value of $\sqrt{196}$.

..... [1]

4 $H = 2W - 3X$

Find the value of W when $H = 4$ and $X = 2$.

$W =$ ..... [2]

5 $\mathbf{a} = \begin{pmatrix} 6 \\ -4 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$

Find $\frac{1}{2}\mathbf{a} + \mathbf{b}$.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

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6 Work out the size of an interior angle of a regular decagon.

..... [2]

7 **(a)** A fair coin has sides heads (H) and tails (T).
A fair 4-sided spinner is numbered 1, 2, 3 and 4.
The coin and the spinner are both spun.

(i) Complete the sample space diagram to show all the outcomes.

	1	**2**	**3**	**4**
H	H1			
T				

[1]

(ii) Find the probability that the outcome is a head and an odd number.

..... [2]

(b) Another spinner can land on black or white.
The probability that it lands on black is $\frac{1}{5}$.
The spinner is spun 3 times.

Find the probability that it lands on white 3 times.

..... [2]

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(c) A bag contains 4 blue balls and 3 red balls.
Rita takes 2 balls from the bag at random without replacement.

Work out the probability that the 2 balls are the same colour.

..... [3]

8 The equation of a line is $4y - x = 12$.

Find the gradient and the y-intercept of the line.

gradient = ...

y-intercept = ...
[3]

9 Expand and simplify.

$$(2 - x)(4 + x)$$

..... [2]

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10 **(a)** Solve.

$$5(2n-3) = 40$$

$n =$ ..... [3]

(b) Solve the simultaneous equations.

$$5x - y = 18$$
$$x + 2y = 8$$

$x =$ .....

$y =$ .....
[3]

(c) Solve the inequality.

$$17 + 2n < 5n - 10$$

..... [2]

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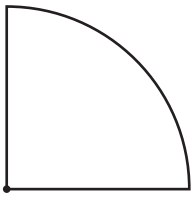
11 The diagram shows a shape that is a quarter of a circle.



NOT TO SCALE

The radius of the circle is 6 cm.

Find the perimeter of the shape.
Give your answer in terms of π.

..... cm [2]

12 Describe fully the **single** transformation that maps the graph of $y = g(x)$ onto the graph of $y = g(x-2)$.

.....

..... [2]

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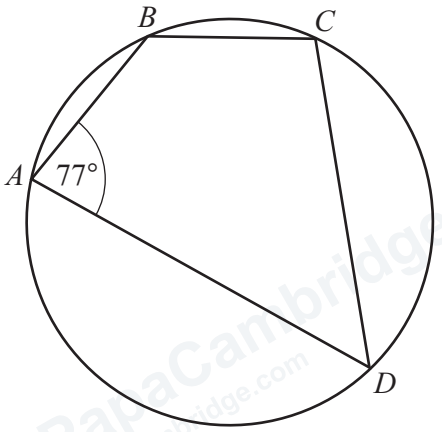
13 **(a)** A, B, C and D are points on a circle.



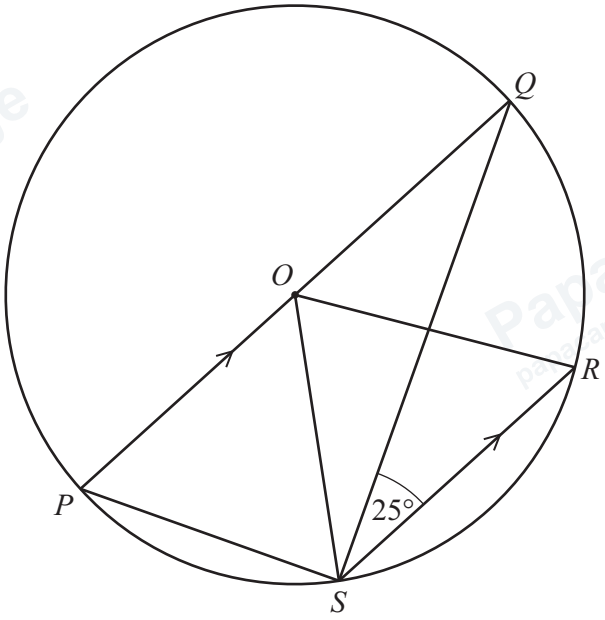
NOT TO SCALE

Complete the sentence giving a geometrical reason for your answer.

Angle BCD = ... because .....

..... [2]

(b) P, Q, R and S are points on the circle centre O.



NOT TO SCALE

Angle $QSR = 25°$.
POQ is parallel to SR.

Find angle SOR.

angle SOR = ... [3]

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14 Find the value of $27^{-\frac{2}{3}}$.

..... [2]

15 **(a)** Write 20 400 in standard form.

..... [1]

(b) Work out $4.2 \times 10^{16} + 3.1 \times 10^{15}$.
Give your answer in standard form.

..... [2]

16 Simplify.

$$\sqrt{75} + \sqrt{48} - \sqrt{12}$$

..... [3]

17 Find the highest common factor (HCF) of $16x^3y^4$ and $24x^2y^5$.

..... [2]

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18 Write down the value of $\log_4 64$.

..... [1]

19 $3^{12} \div 3^n = 3^{2n}$

Find the value of n.

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

20 A is the point (–4, 3) and B is the point (8, –1).

(a) Find the length of AB.
Give your answer as a surd.

..... [3]

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

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

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21 **(a)** Write as a single fraction in its simplest form.

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

..... [3]

(b) Simplify.

$$\frac{4x^2-9}{2x^2+5x-12}$$

..... [4]

22 $f(w) = \frac{1}{\cos w} + 2$ for values of w between 0° and 360°, $w \neq 90°$ and $w \neq 270°$.

Solve $f(w) = 0$.

..... [3]

Question 23 is on the back page.

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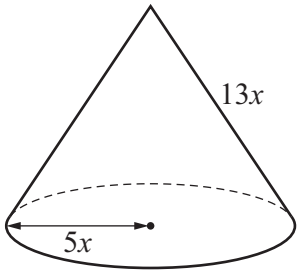
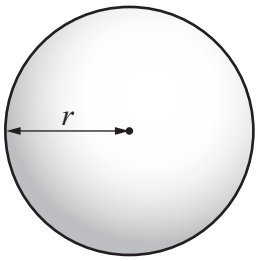
23 In this question, all lengths are in centimetres.
The diagram shows a cone and a sphere.





NOT TO SCALE

The radius of the cone is $5x$.
The sloping edge of the cone is $13x$.
The radius of the sphere is r.
The volume of the cone is equal to the volume of the sphere.

Show that $r^3 = 75x^3$.

[5]

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