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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.

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 .

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

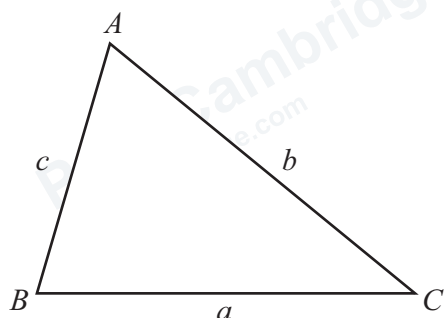
Volume, V , of sphere of radius r .

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

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

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

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]



- (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]

10 (a) Solve.

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

$$n = \dots\dots\dots [3]$$

(b) Solve the simultaneous equations.

$$5x - y = 18$$

$$x + 2y = 8$$

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

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

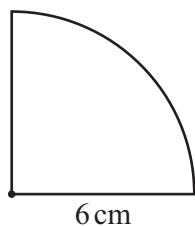
[3]

(c) Solve the inequality.

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

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

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



NOT TO SCALE

The radius of the circle is 6 cm.

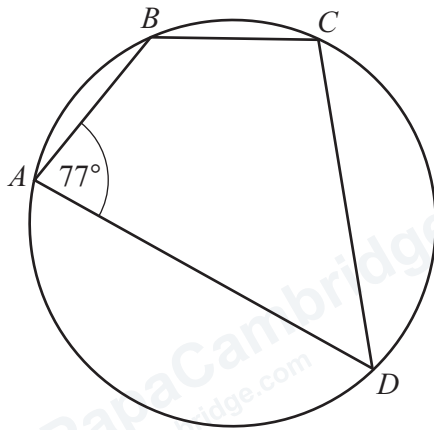
Find the perimeter of the shape.
Give your answer in terms of π .

..... 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]

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

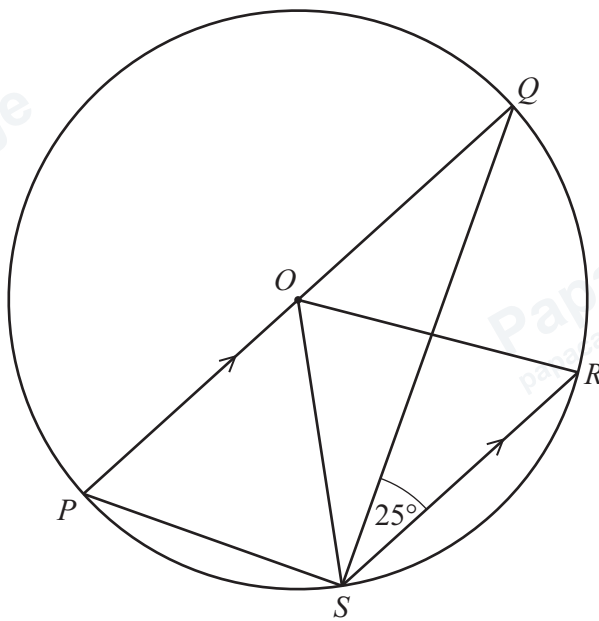


NOT TO SCALE

Complete the sentence giving a geometrical reason for your answer.

Angle $BCD = \dots\dots\dots$ because $\dots\dots\dots$
 $\dots\dots\dots$ [2]

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



NOT TO SCALE

Angle $QSR = 25^\circ$.
 POQ is parallel to SR .

Find angle SOR .

angle $SOR = \dots\dots\dots$ [3]

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]

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]

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

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

- (b) Simplify.

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

[3]

[4]

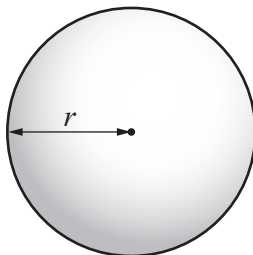
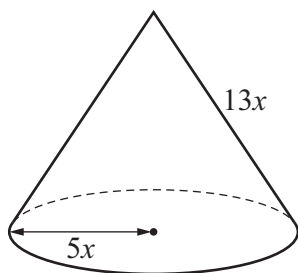
- 22 $f(w) = \frac{1}{\cos w} + 2$ for values of w between 0° and 360° , $w \neq 90^\circ$ and $w \neq 270^\circ$.

Solve $f(w) = 0$.

[3]

Question 23 is on the back page.

- 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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