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CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/42

Paper 4 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.
- 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.

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 .

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

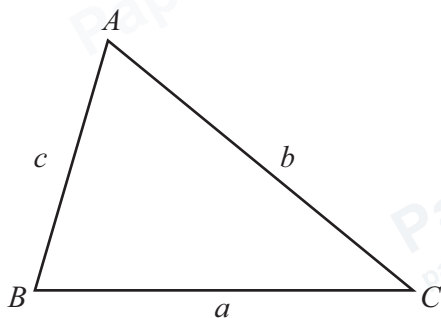
Volume, V , of sphere of radius r .

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

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 A quadrilateral has one line of symmetry and no rotational symmetry.

Write down the mathematical name of this quadrilateral.

..... [1]

- 2 Simplify.

$$3c - d + 4c - d$$

..... [2]

- 3 Simplify.

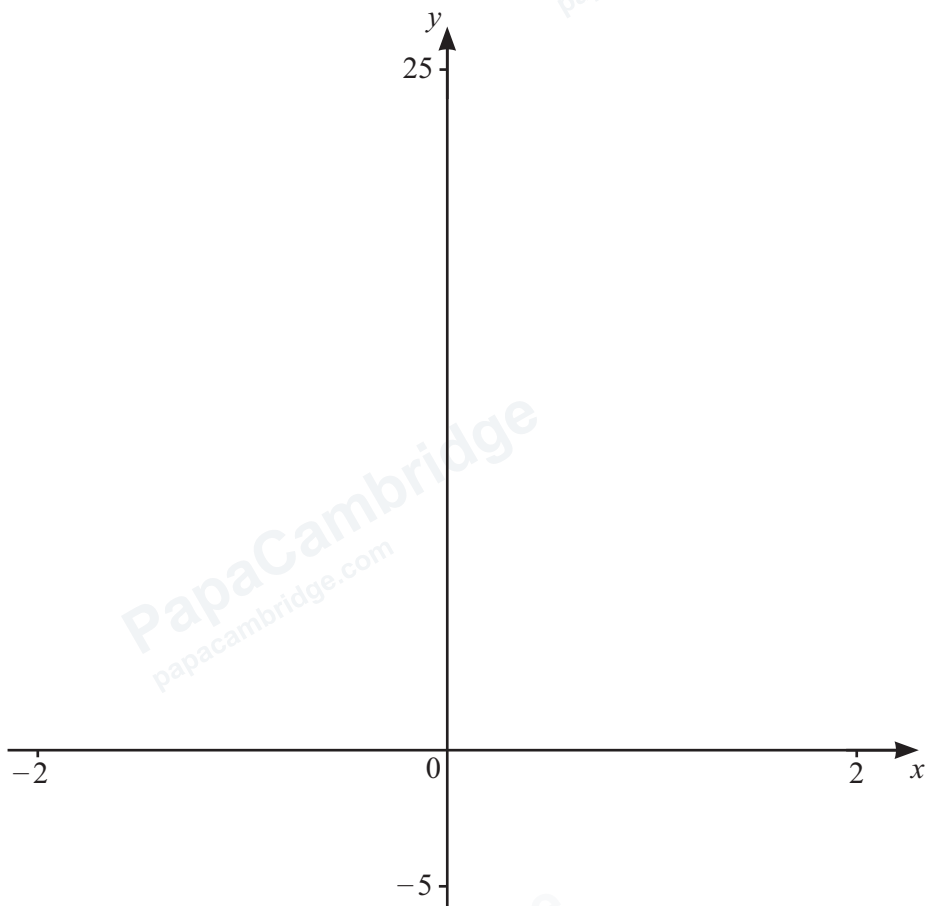
$$\frac{5x}{y} \times \frac{3}{p}$$

..... [1]

- 4 Factorise.

$$2p^2 - 8pt$$

..... [2]



$$f(x) = \frac{5}{x^2} + \frac{1}{x^3}, \quad x \neq 0$$

(a) On the diagram, sketch the graph of $y = f(x)$ for values of x between -2 and 2 . [3]

(b) Find the zero of $f(x)$.
..... [1]

(c) Find the coordinates of the local maximum point.
(..... , ...) [2]

(d) The equation $f(x) = k$ has one solution.
Find the range of values of k .
..... [2]





(e) $h(x) = \frac{5}{(x+1)^2} + \frac{1}{(x+1)^3}, \quad x \neq -1$

Describe fully the **single** transformation that maps the graph of $y = f(x)$ onto the graph of $y = h(x)$.

.....
 [2]

- 6 (a) Find the highest common factor (HCF) of 180 and 96.

..... [2]

- (b) Find the lowest common multiple (LCM) of x^{12} and x^{14} .

..... [1]

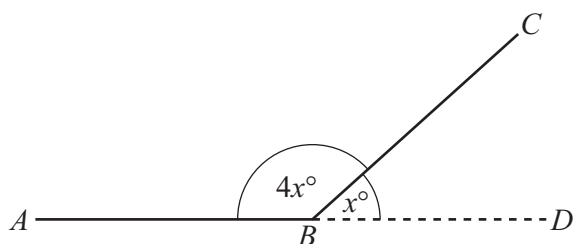


- 7 Prices are reduced by 20% in a sale.
The sale price of a computer is \$284.80 .

Calculate the original price of the computer.

\$ [2]

8



NOT TO SCALE

AB and BC are two sides of a regular polygon.
 ABD is a straight line.

Find the number of sides of this polygon.

..... [2]



- 9 Use the quadratic formula to solve $3p^2 - p - 3 = 0$.
Give your answers correct to 2 decimal places.
You must show all your working.

$$p = \dots\dots\dots \text{ or } p = \dots\dots\dots [3]$$

10 $y \propto \frac{1}{x^3}$

When $x = 2$, $y = \frac{1}{4}$.

Find y in terms of x .

$$y = \dots\dots\dots [2]$$

11 These are the first 5 terms of a sequence.

80 -40 20 -10 5

(a) Write down the next term.

..... [1]

(b) Find the n th term.

..... [2]

12 The value of a car decreases at a rate of 10% per year.
The value of the car now is \$22 680.

(a) Calculate the value of the car 2 years ago.

\$ [2]

(b) The value of the car now is \$22 680.

Calculate the number of complete years it will take for the value of the car to be first less than \$10 000.

..... [4]





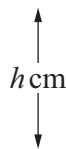
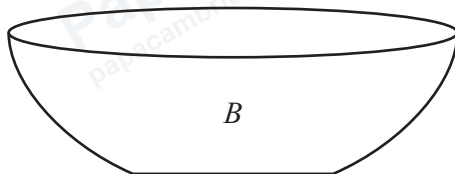
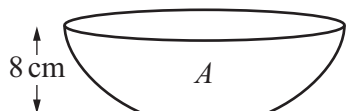
- 13 (a) Calculate $(6.2 \times 10^{87}) \times (3 \times 10^{87})$.
Give your answer in standard form.

..... [2]

- (b) Simplify $(4 \times 10^y) + (8 \times 10^{y-1})$ where y is an integer.
Give your answer in standard form.

..... [2]

14

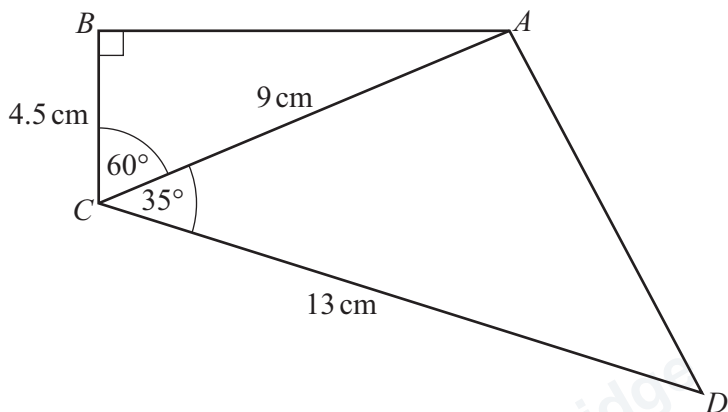


NOT TO SCALE

The two solids are mathematically similar.
The volume of solid B is 2 times the volume of solid A .
The height of solid A is 8 cm.
The height of solid B is h cm.

Find the value of h .

$h =$ [2]



NOT TO SCALE

- (a) Calculate the area of the quadrilateral $ABCD$.

..... cm^2 [3]

- (b) Calculate the perimeter of the quadrilateral $ABCD$.

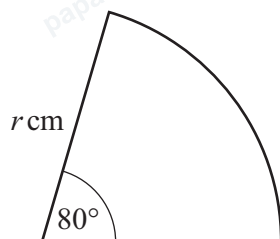
..... cm [5]

- (c) P is the point on the line CD that is the nearest point to A .

Calculate CP .

$CP =$ cm [3]

- 16 The diagram shows a sector of a circle.



NOT TO SCALE

The area of the sector is 62.6 cm^2 .

Calculate the value of r .

$r = \dots\dots\dots$ [3]

- 17 Each of 100 students recorded the time spent doing homework one evening. The results are shown in the table.

time (t minutes)	$0 < t \leq 60$	$60 < t \leq 90$	$90 < t \leq 120$	$120 < t \leq 180$
frequency	7	31	45	17

- (a) Calculate an estimate of the mean.

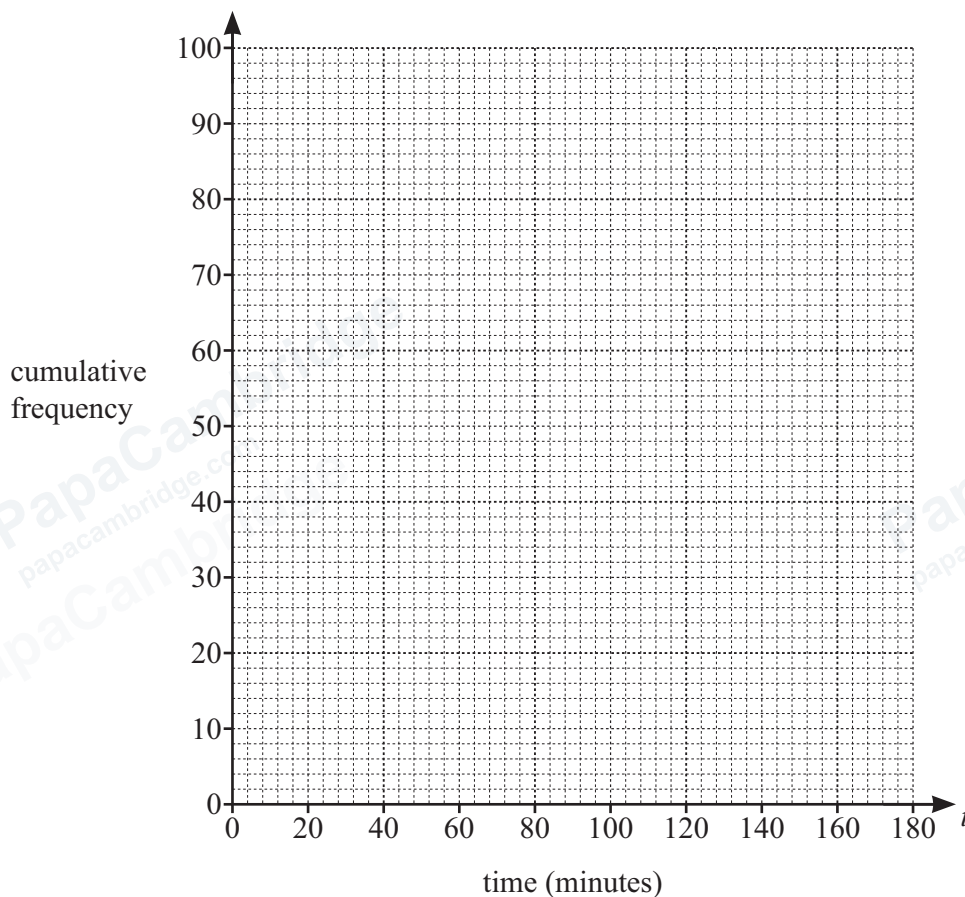
..... min [2]

- (b) (i) Complete the cumulative frequency table.

time (t minutes)	$t \leq 60$	$t \leq 90$	$t \leq 120$	$t \leq 180$
cumulative frequency	7			100

[1]

- (ii) On the grid, draw a cumulative frequency diagram.



[2]

(iii) Use your cumulative frequency diagram to estimate

(a) the median

..... [1]

(b) the lower quartile

..... [1]

(c) the number of students who spent 70 minutes or less on their homework.

..... [1]

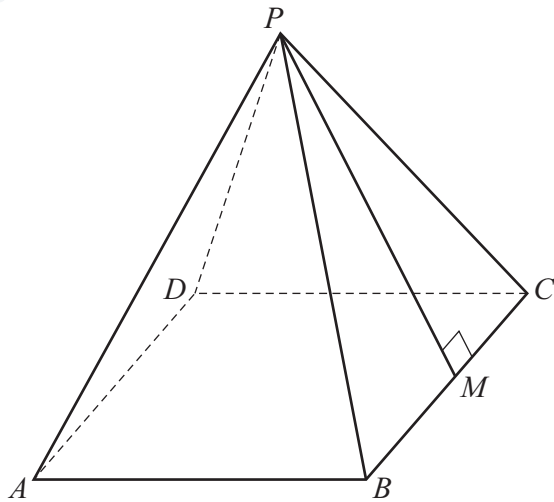
(c) Two of the 100 students are chosen from the same time interval in the first table.

The probability of choosing both these students is $\frac{1}{5}$.

Complete the time interval they were chosen from.
Show how you decide.

..... $< t \leq$ [2]

- 18 The diagram shows a pyramid on a square base $ABCD$.



NOT TO SCALE

M is the midpoint of BC .
 $BC = 10$ cm and $PM = 12$ cm.

- (a) Calculate the area of triangle PBC .

..... cm^2 [1]

- (b) Calculate the total surface area of the pyramid.

..... cm^2 [1]

- (c) Calculate the angle between PM and the base $ABCD$.

..... [2]





19 Simplify.

$$\frac{1 - w^2}{1 + wx - w - x}$$

..... [4]



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