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CAMBRIDGE INTERNATIONAL MATHEMATICS**0607/22**

Paper 2 (Extended)

October/November 2024**45 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 and you will be given marks for correct methods even if your answer is incorrect.
- All answers should be given in their simplest form.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [].

This document has **8** pages.

Formula List

For the equation

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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 .

$$A = \pi rl$$

Curved surface area, A , of sphere of radius r .

$$A = 4\pi r^2$$

Volume, V , of pyramid, base area A , height h .

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

Volume, V , of cylinder of radius r , height h .

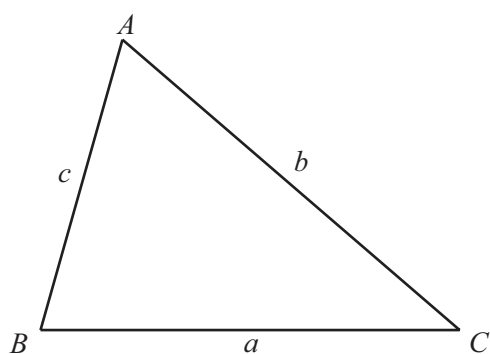
$$V = \pi r^2 h$$

Volume, V , of cone of radius r , height h .

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

Volume, V , of sphere of radius r .

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



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

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

$$\text{Area} = \frac{1}{2}bc \sin A$$



Answer **all** the questions.

- 1** Complete the statement.

The common factors of 24 and 45 are 1 and [1]

- 2** Work out $2 \div 0.04$.

..... [1]

- ### 3 Expand.

$$x^3(x-2)$$

..... [2]

- 4** Alex invests \$200 at a rate of 2% per year simple interest.

Work out the total interest earned at the end of 4 years.

\$ [2]

- 5** Didi buys 2 books at $\$b$ each and p magazines at $\$m$ each.

Find an expression, in terms of b , p and m , for the total amount Didi pays.

\$ [2]





- 6 (a)** Rodrigo runs at an average speed of 10 km/h.

Work out the number of minutes he takes to run 5 km.

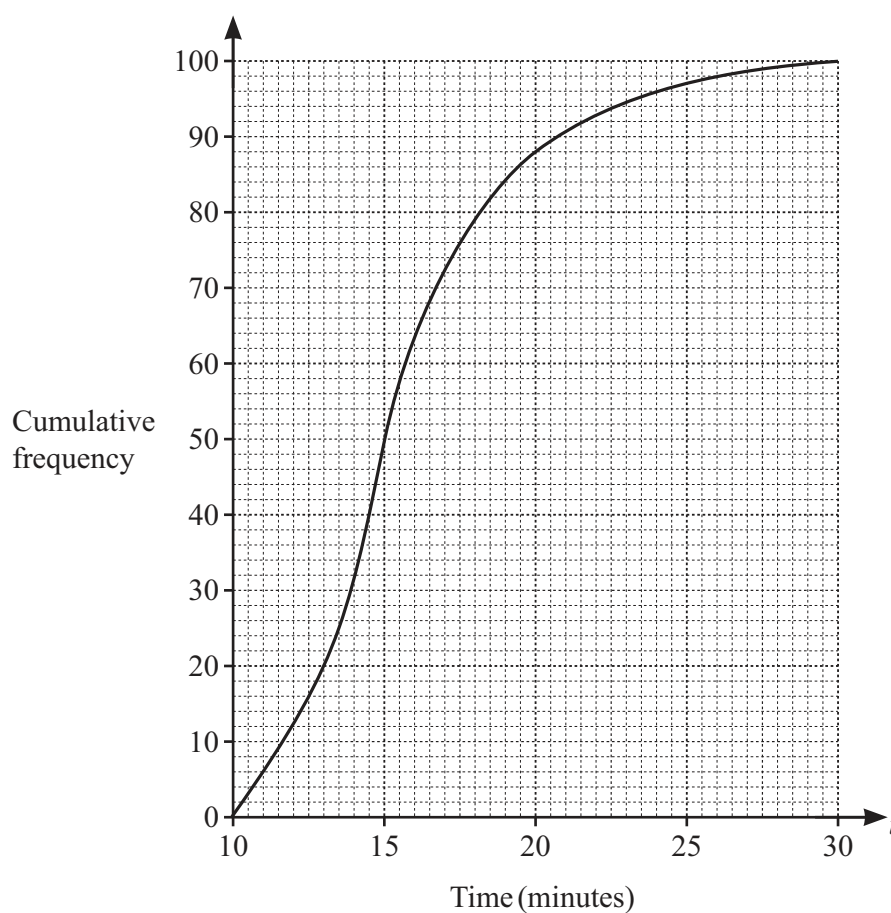
..... min [1]

- (b)** Roberta takes 1 hour 30 minutes to run 12 km.

Work out Roberta's average speed.

..... km/h [1]

- 7 Each of 100 students records the time taken to walk one kilometre. The cumulative frequency curve shows the results.



Find

- (a) the median

..... min [1]

- (b) the lower quartile

..... min [1]

- (c) the number of students who took more than 20 minutes to walk one kilometre.

..... [2]





5

8 Work out $\frac{3}{11} \div \frac{1}{2}$.

..... [2]

9 The interior angle of a regular polygon is 160° .

Work out the number of sides for this polygon.

..... [3]

10 The mean of five numbers is 7.
The five numbers are 3, 5, 10, 11 and x .

Find the value of x .

$x = \dots [2]$

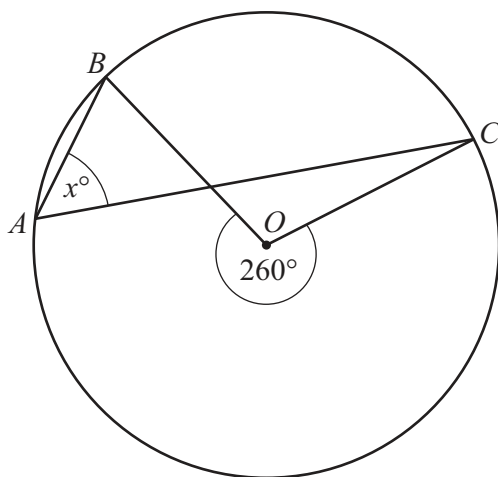
11 Simplify $(64x^{18})^{\frac{2}{3}}$.

..... [2]





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NOT TO
SCALE

A, B and C lie on the circle centre O .

- (a)** Work out the value of x .

$x =$ [2]

- (b) Y is a point on the minor arc BYC .

Work out angle BYC .

Angle $BYC = \dots\dots\dots [1]$

- 13** Simplify fully.

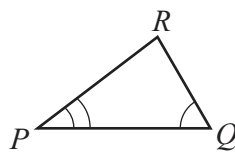
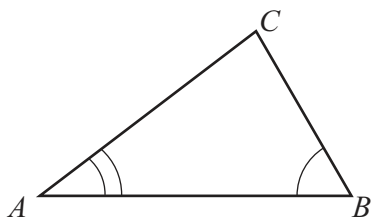
$$\sqrt{20} + \sqrt{45} + \sqrt{80}$$

..... [2]





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NOT TO
SCALE

The triangles ABC and PQR are similar.
The area of triangle ABC is 24 cm^2 .

$$\frac{PQ}{AB} = \frac{1}{2}$$

Work out the area of triangle PQR .

..... cm² [2]

15

$$x^2 + 18x + 2 = (x + p)^2 + t$$

Find the value of p and the value of t .

$p =$

$t =$ [3]

16 y varies inversely as $\sqrt{x}$.
When $x = 4$, $y = 8$.

Find y in terms of x .

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

Questions 17 and 18 are printed on the next page.





17 $\cos x = -\frac{\sqrt{3}}{2}$ and $0^\circ \leq x \leq 360^\circ$.

Find the values of x .

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [2]

18 $\log 4 + 2 \log x = 2$

Find the value of x .

$x = \dots\dots\dots$ [3]

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