Cambridge Assessment
International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER

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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 $ax^2 + bx + c = 0$ $\qquad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Curved surface area, A, of cylinder of radius r, height h. $\qquad A = 2\pi rh$

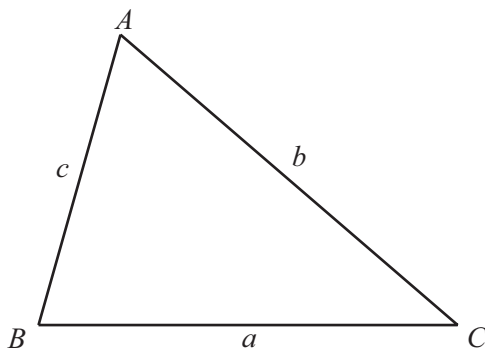Curved surface area, A, of cone of radius r, sloping edge l. $\qquad A = \pi rl$

Curved surface area, A, of sphere of radius r. $\qquad A = 4\pi r^2$

Volume, V, of pyramid, base area A, height h. $\qquad V = \dfrac{1}{3}Ah$

Volume, V, of cylinder of radius r, height h. $\qquad V = \pi r^2 h$

Volume, V, of cone of radius r, height h. $\qquad V = \dfrac{1}{3}\pi r^2 h$

Volume, V, of sphere of radius r. $\qquad V = \dfrac{4}{3}\pi r^3$

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

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

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

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.
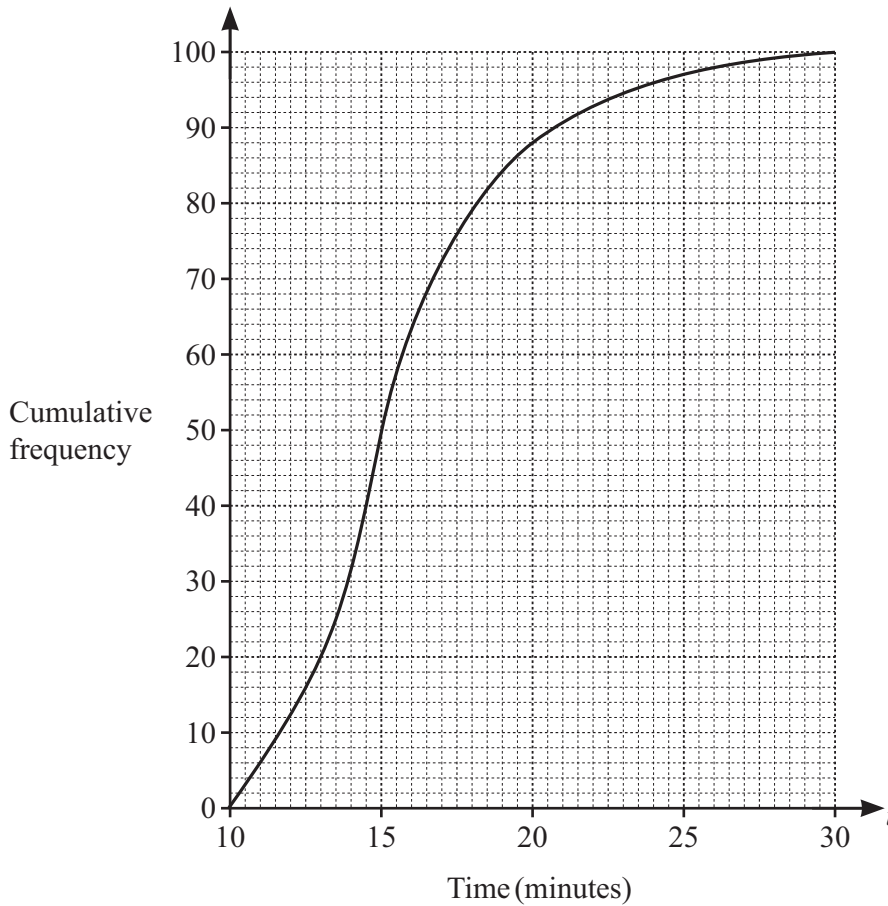
Find

(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]

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

.... [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.

$x =$ .... [2]

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

.... [2]

12
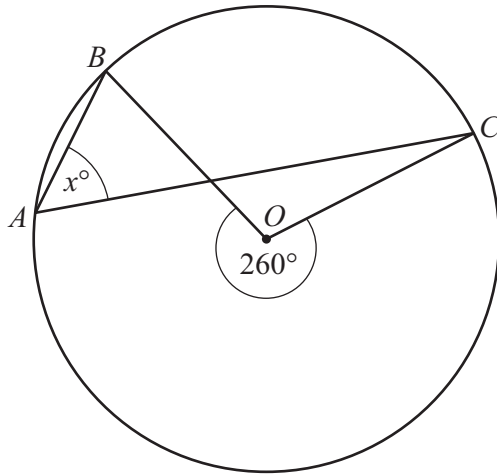
NOT TO
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A, B and C lie on the circle centre O.

(a) Work out the value of x.

$x =$ .... [2]

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

Work out angle BYC.

Angle $BYC =$ .... [1]

13 Simplify fully.

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

.... [2]

14
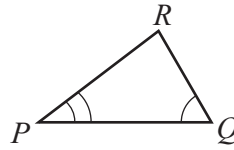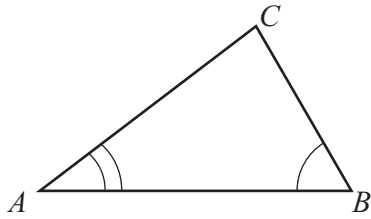
The triangles *ABC* and *PQR* are similar.
The area of triangle *ABC* is 24 cm^2.

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

Work out the area of triangle *PQR*.

.... cm^2 [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 = ... [2]

Questions 17 and 18 are printed on the next page.

17 $\cos x = -\dfrac{\sqrt{3}}{2}$ and $0° \leqslant x \leqslant 360°$.

Find the values of x.

$x = $ .... or $x = $ .... [2]

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

Find the value of x.

$x = $ .... [3]