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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME

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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.

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Formula List

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

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. $A = \pi rl$

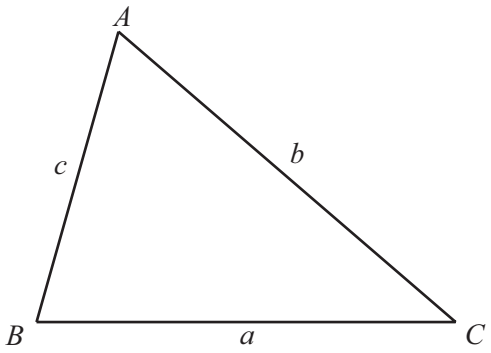
Curved surface area, A, of sphere of radius r. $A = 4\pi r^2$

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



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

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

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

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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]

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

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

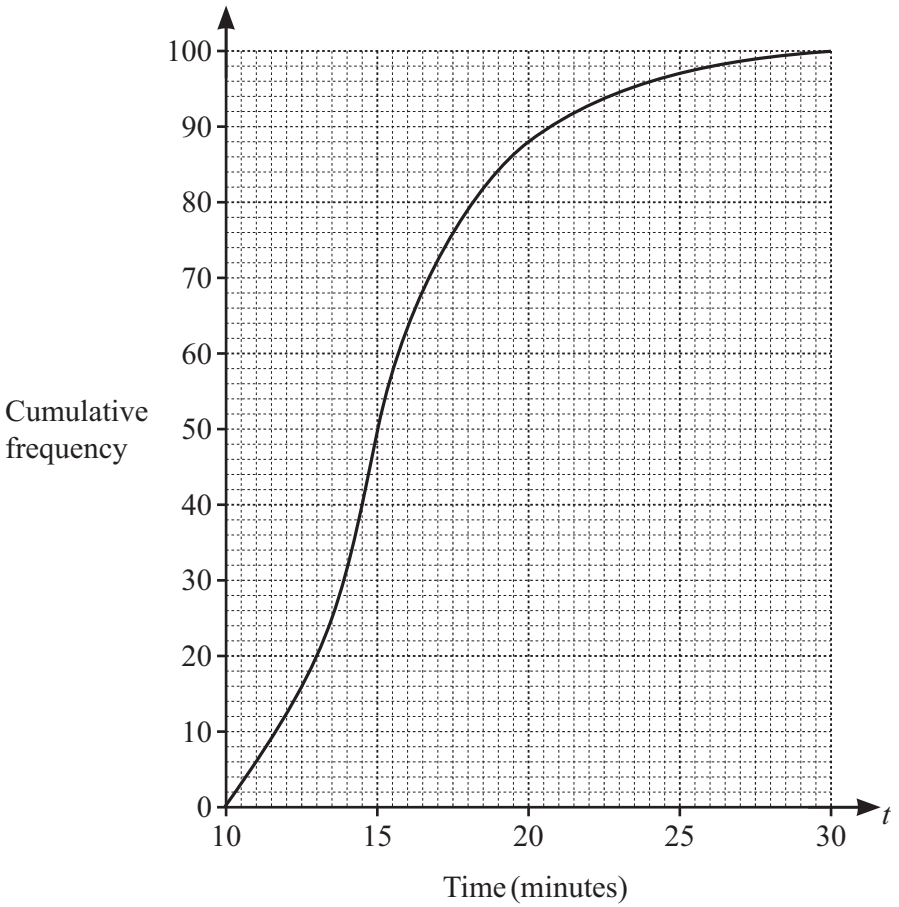
..... min [1]

(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]

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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.

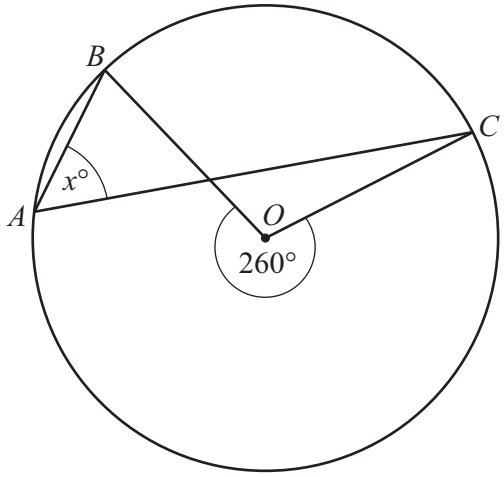
Find the value of x.

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

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

..... [2]

12



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* = ... [1]

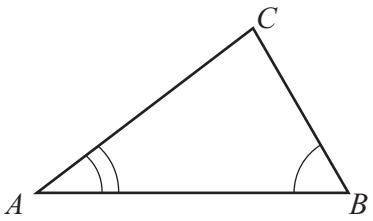
13 Simplify fully.

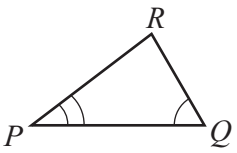
$$\sqrt{20} + \sqrt{45} + \sqrt{80}$$

..... [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.

..... 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.

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17 $\cos x = -\frac{\sqrt{3}}{2}$ 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]

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