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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

6576021483

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

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. Any blank pages are indicated.

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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. $A = \pi rl$

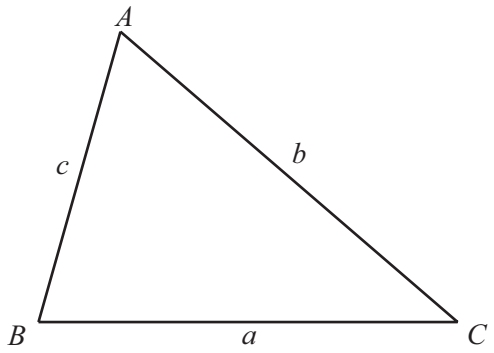
Curved surface area, A, of sphere of radius r. $A = 4\pi r^2$

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 Work out.

$$(0.01)^2$$

..... [1]

2 **(a)** Write $\frac{24}{60}$ in its lowest terms.

..... [1]

(b) Work out $\frac{5}{7} - \frac{1}{14}$.

..... [2]

3 This is a list of ten numbers.

19 24 16 17 22 14 28 34 20 18

(a) Find the range.

..... [1]

(b) Find the median.

..... [2]

4 Expand $x^3(8x - x^2)$.

..... [2]

5 Simplify $(9x^9y^4)^{0.5}$.

..... [2]

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6 A regular polygon has 12 sides.

Find the size of an exterior angle of this polygon.

..... [2]

7 y varies as the square of $(x+1)$.
When $y = 18$, $x = 2$.

Find y when $x = 3$.

$y =$ ..... [3]

8 Factorise.

(a) $6ax - 8by - 3ay + 16bx$

..... [2]

(b) $5x^2 - 7x - 6$

..... [2]

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9 Write in standard form.

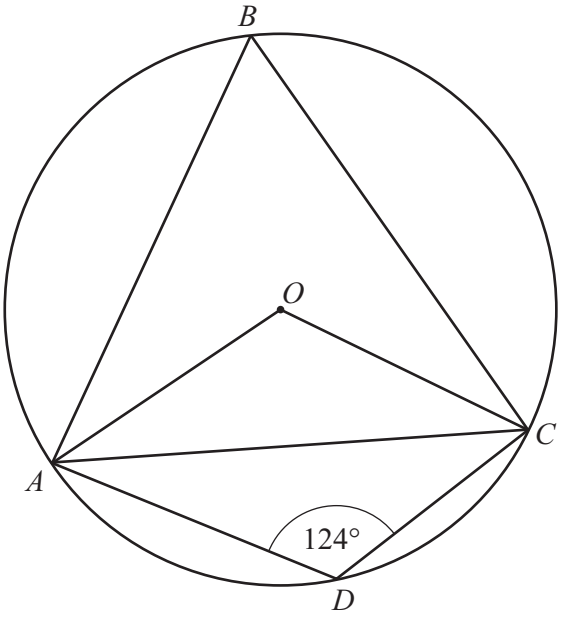
(a) 760 900

..... [1]

(b) 0.080 07

..... [1]

10



NOT TO SCALE

A, *B*, *C*, and *D* lie on a circle, centre *O*.

Find

(a) angle *ABC*

Angle *ABC* = ... [1]

(b) obtuse angle *AOC*

Angle *AOC* = ... [1]

(c) angle *OCA*.

Angle *OCA* = ... [1]

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11 **(a)** Simplify.

$$\sqrt{2}\left(5\sqrt{8}-7\sqrt{2}\right)$$

..... [2]

(b) Rationalise the denominator.

$$\frac{21}{3-\sqrt{2}}$$

..... [2]

12 Vlad has two unbiased dice, each numbered 1, 2, 3, 4, 5, 6.
Vlad rolls the two dice and records the **total** score.

Find the probability that the total score is

(a) 13

..... [1]

(b) 11.

..... [2]

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13 The point A has coordinates $(4, -1)$ and the point B has coordinates $(8, -3)$.

Find the equation of the perpendicular bisector of the line AB.
Give your answer in the form $y = mx + c$.

$y =$ ..... [5]

14 Write as a single fraction in its simplest form.

$$\frac{8}{4x-1} - \frac{3}{2x+1}$$

..... [3]

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