Cambridge Assessment International Education

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5116166139 2

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **October/November 2022**

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

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

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

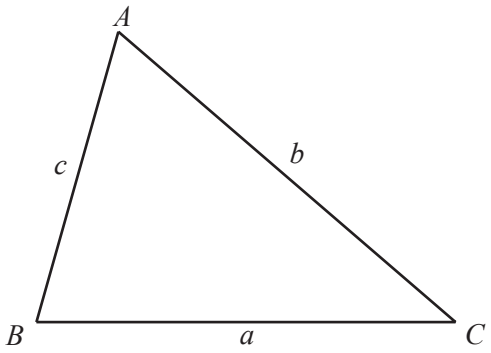
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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

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

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

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



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

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

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

Answer **all** the questions.

1 These are the scores of 10 students in a test.

7 15 9 4 16 6 8 11 12 10

Find

(a) the median,

..... [2]

(b) the mean.

..... [2]

2 A regular polygon has 24 sides.

Find the size of each interior angle of the polygon.

..... [3]

3 $P = 2a + b^2 - 3c$

Find P when $a = 5$, $b = -4$ and $c = -3$.

$P =$ ..... [2]

4 You are given that $\sqrt{7} = 2.65$ and $\sqrt{70} = 8.37$, each correct to 2 decimal places.

Use this information to find the value of

(a) $\sqrt{700}$,

..... [1]

(b) $\sqrt{280}$.

..... [1]

5 A biased 5-sided spinner is spun 200 times.
The results are shown in the table.

Number	1	2	3	4	5
Frequency	24	48	63	38	27

(a) Find the relative frequency of the spinner landing on 2.

..... [1]

(b) The spinner is spun 1000 times.

Find the expected number of times that the spinner lands on 2.

..... [1]

6 Solve $2x + 6 > 5x - 10$.

..... [2]

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7 Describe **fully** the inverse of each transformation.

(a) Translation by $\begin{pmatrix} -2 \\ 5 \end{pmatrix}$.

..... [2]

(b) Enlargement with centre (2, 3) and scale factor 2.

.....

..... [2]

8 Find the value of $125^{-\frac{1}{3}}$.

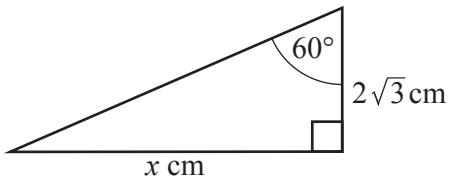
..... [1]

9 y is inversely proportional to x^3.
When $x = 5$, $y = 2$.

Find y when $x = 10$.

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

10



NOT TO SCALE

Find the value of x.

$x =$ ..... [3]

11 Simplify.

$$\frac{ax^2 + 5ax + bx + 5b}{x^2 - 25}$$

..... [3]

12 $f(x) = 11x + 2$ $g(x) = \sin x°$

(a) Find $f^{-1}(x)$.

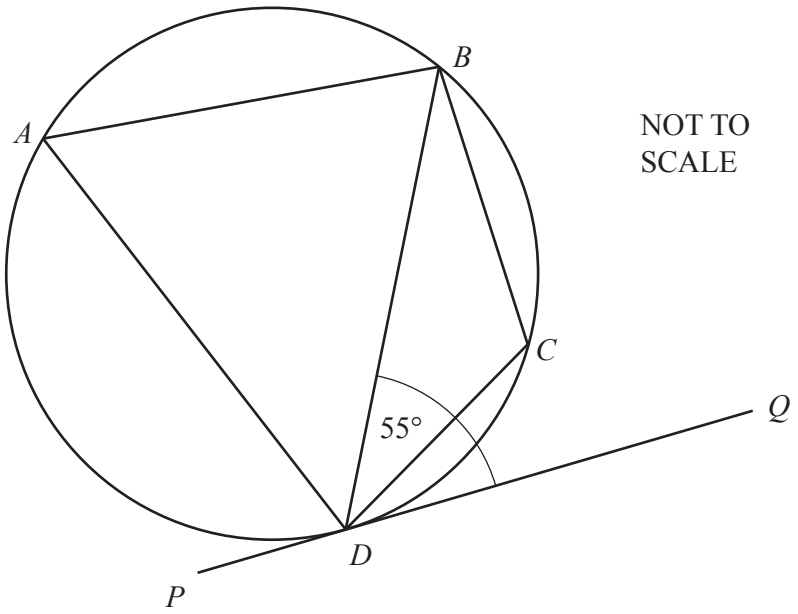
$f^{-1}(x) =$ ..... [2]

(b) Find $g(f(8))$.

..... [2]

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13



A, B, C and D are points on the circle.
PQ is a tangent to the circle at D.
Angle $BDQ = 55°$.

Complete these statements giving a reason for each answer.

(a) Angle $BAD =$ ..... because .....

..... [2]

(b) Angle $BCD =$ ..... because .....

..... [2]

14 $4\log y + 3\log x = 2$

Find y in terms of x.

..... [3]

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