Cambridge Assessment International Education

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T007710407

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/22**

Paper 2 (Extended) **February/March 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 $ax^2 + bx + c = 0$ $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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. $\quad A = \pi rl$

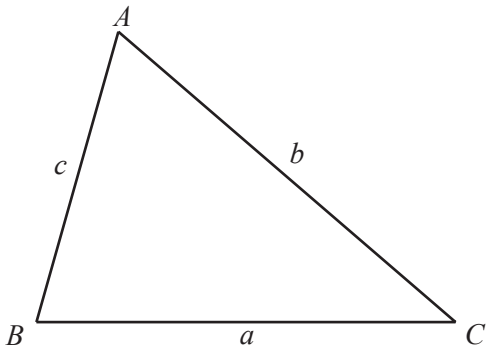
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

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.

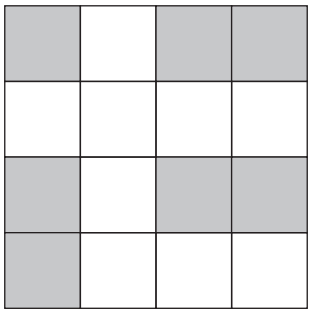
1 Write down a fraction between $\frac{5}{8}$ and $\frac{3}{4}$.

..... [1]

2 Work out $8 \div 0.02$.

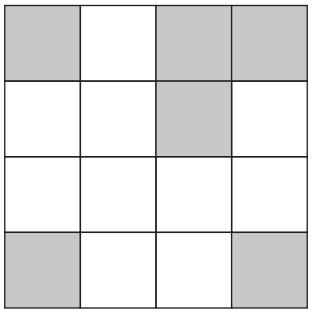
..... [1]

3 **(a)** Shade **one** square so that the shape has one line of symmetry.



[1]

(b) Shade **two** squares so that the shape has rotational symmetry of order 2.



[1]

4 Simplify $\frac{a^3 \times a^7}{a^4}$.

..... [1]

5 **(a)** Write the ratio 120 : 150 : 75 in its simplest form.

..... : ..... : ..... [2]

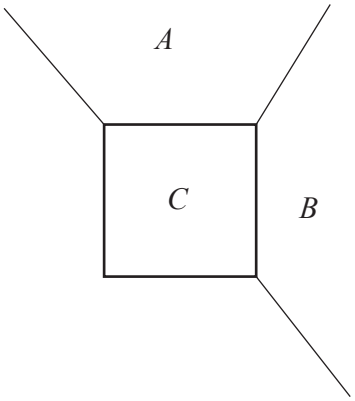
(b) Advik and Bidhi share $160 in the ratio 3 : 5.

Calculate how much they each receive.

Advik $ .....

Bidhi $ ..... [2]

6



NOT TO SCALE

The diagram shows part of a regular hexagon, *A*, and part of a regular polygon, *B*.
C is a square.

Find the number of sides of the regular polygon, *B*.

..... [4]

7 Shami asked 200 people from a town about their favourite type of TV programme.
These are the results.

Type of programme	Sport	Comedy	Drama	Quiz	Reality	Documentary
Frequency	46	38	23	21	56	16

(a) Find the relative frequency of Reality.

..... [1]

(b) The town has 40 000 inhabitants.

Work out the expected number of people in the town whose favourite type of programme is Documentary.

..... [2]

8 Solve the simultaneous equations.

$$\frac{1}{2}x + \frac{2}{3}y = 8$$

$$3x - y = 18$$

$x =$ .....

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

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9 **(a)** Find the highest common factor (HCF) of 72 and 120.

..... [1]

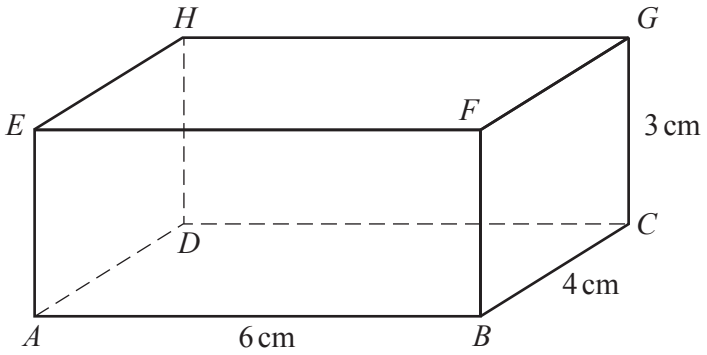
(b) Find the lowest common multiple (LCM) of 54 and 81.

..... [2]

10 Work out $16^{\frac{1}{4}}$.

..... [1]

11



NOT TO SCALE

ABCDEFGH is a cuboid.

Find the length of *AG*.
Give your answer in surd form.

..... cm [3]

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12 Rearrange this formula to make R the subject.

$$P = \frac{2(Q+3R)}{5}$$

$R =$ ..... [3]

13 Write in the form $a+b\sqrt{3}$ where a and b are integers.

(a) $(5+2\sqrt{3})^2$

..... [2]

(b) $\dfrac{5}{2+\sqrt{3}}$

..... [2]

Questions 14 and 15 are printed on the next page.

14 y is inversely proportional to the square of x.
When $x = 2$, $y = 12$.

Find y when $x = 4$.

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

15 $\log p = 2\log 6 + \log 5 - 2$

Find the value of p.

$p =$ ..... [4]

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