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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.

Formula List

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

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 . $A = \pi rl$

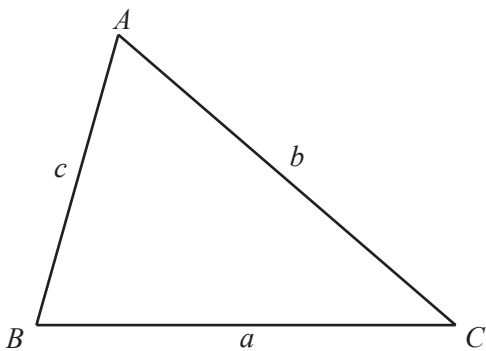
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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



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

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

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

Answer **all** the questions.

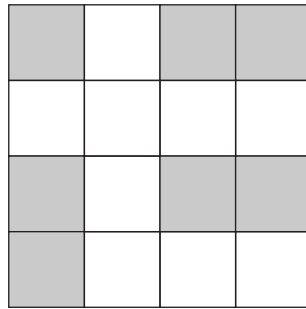
- 1 Write down a fraction between $\frac{5}{8}$ and $\frac{3}{4}$.

..... [1]

- 2 Work out $8 \div 0.02$.

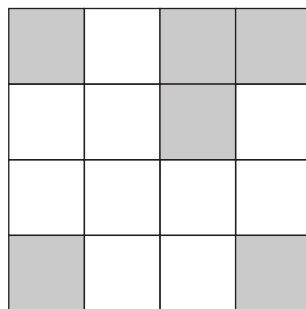
..... [1]

- 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]

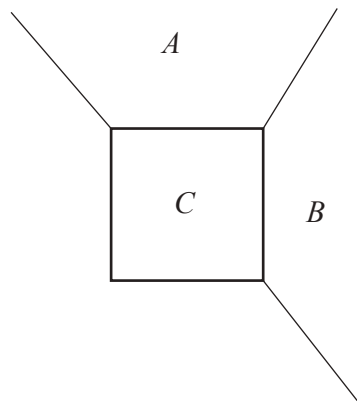
(b) Advik and Bidhi share \$160 in the ratio $3 : 5$.

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]

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

..... [1]

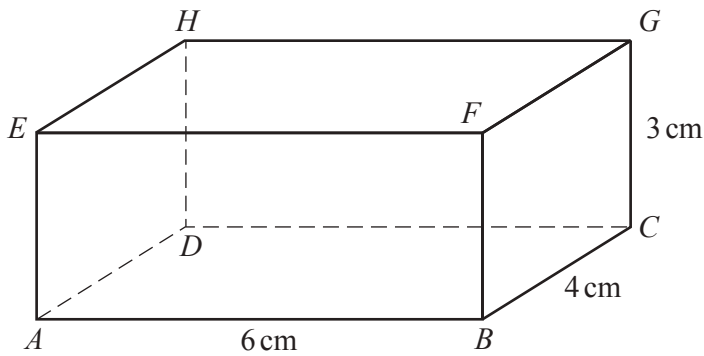
(b) Find the lowest common multiple (LCM) of 54 and 81.

..... [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]

12 Rearrange this formula to make R the subject.

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

$$R = \dots\dots\dots [3]$$

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

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

$$\dots\dots\dots [2]$$

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

$$\dots\dots\dots [2]$$

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 $x = 4$.

$$y = \dots\dots\dots [3]$$

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

Find the value of p .

$$p = \dots\dots\dots [4]$$

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