



# Cambridge IGCSE™

CANDIDATE  
NAME

CENTRE  
NUMBER

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/21**

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.



## 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  $l$ .  $A = \pi rl$

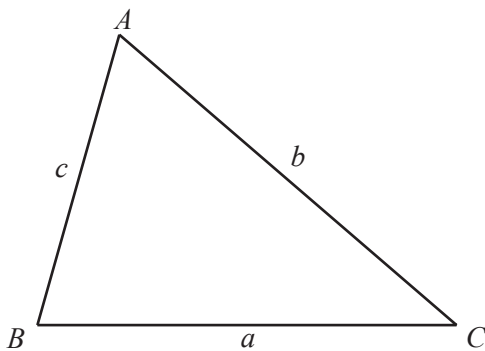
Curved surface area,  $A$ , of sphere of radius  $r$ .  $A = 4\pi r^2$

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 Work out.

(a)  $1 + 2 - 3 \times 4$

..... [1]

(b)  $1 + 2 \times 3 - 4$

..... [1]

2 (a) Write  $2\frac{1}{4}$  as an improper fraction.

..... [1]

(b) Work out.

$$\frac{7}{8} - \frac{3}{4}$$

..... [1]

3 Expand.

$$3(x - 2y)$$

..... [1]

4 Change  $0.2\text{ m}^2$  into  $\text{cm}^2$ ......  $\text{cm}^2$  [1]5 Work out  $4^{\frac{3}{2}}$ .

..... [1]

- 6 (a) Work out  $(1.5 \times 10^1) \times (7 \times 10^{-3})$ .  
Give your answer in standard form.

..... [2]

- (b) Work out  $(6.5 \times 10^{-2}) + (7.8 \times 10^{-3})$ .  
Give your answer in standard form.

..... [2]

- 7 These are the scores of 10 students in a test.

15    5    20    25    7    13    15    11    17    12

Find

- (a) the range,

..... [1]

- (b) the mean.

..... [2]

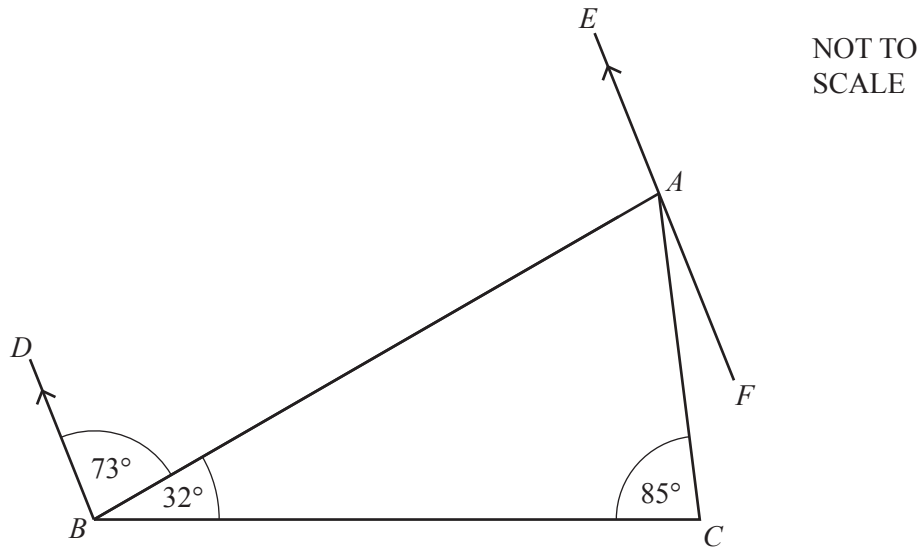
- 8 Find an expression for the  $n$ th term of each sequence.

- (a) 1,    7,    13,    19,    25,    ...

..... [2]

- (b) 1,    -2,    3,    -4,    5,    ...

..... [2]



$BD$  is parallel to  $FAE$ .

(a) Find angle  $BAE$ .

Angle  $BAE = \dots\dots\dots$  [1]

(b) Find angle  $FAC$ .

Angle  $FAC = \dots\dots\dots$  [2]

6

10  $A$  is the point  $(1, 11)$  and  $B$  is the point  $(4, 5)$ .

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

$y = \dots\dots\dots$  [5]

11 Solve.

(a)  $4x^2 - 5x - 6 = 0$

$x = \dots\dots\dots$  or  $x = \dots\dots\dots$  [3]

(b)  $|2x + 1| = 3$

$\dots\dots\dots$  [2]

- 12 Bag A contains balls numbered 2, 4, 4, 4.  
Bag B contains balls numbered 1, 1, 2, 3, 4, 4.  
Bag C contains balls numbered 1, 2, 3, 4.

One of these three bags is chosen at random.  
A ball is chosen at random from this bag.

Find the probability that the ball chosen is numbered 4.  
Give your answer as a fraction.

$\dots\dots\dots$  [3]

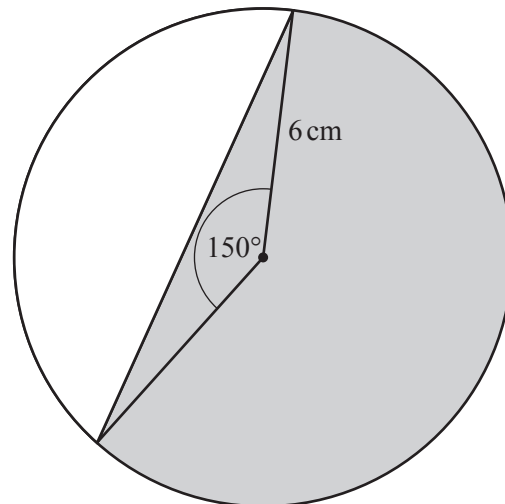
**Questions 13 and 14 are printed on the next page.**

13 Solve.

$$\log 2x = 5$$

$$x = \dots\dots\dots [2]$$

14



NOT TO  
SCALE

A sector of a circle with radius 6 cm has a sector angle of  $150^\circ$ .

Find the exact value of the area of the shaded region.  
Give your answer in its simplest form.

$$\dots\dots\dots \text{cm}^2 [4]$$

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