



Cambridge IGCSE™

CANDIDATE
NAME

--

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



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 . $A = \pi rl$

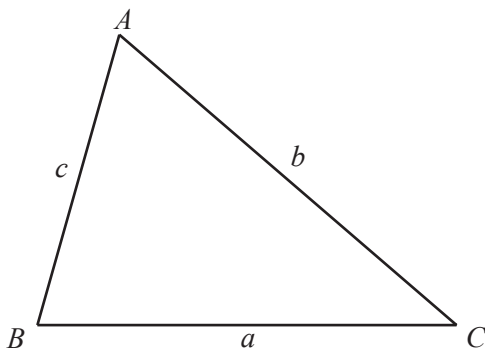
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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 m^2 into cm^2 .

..... 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]

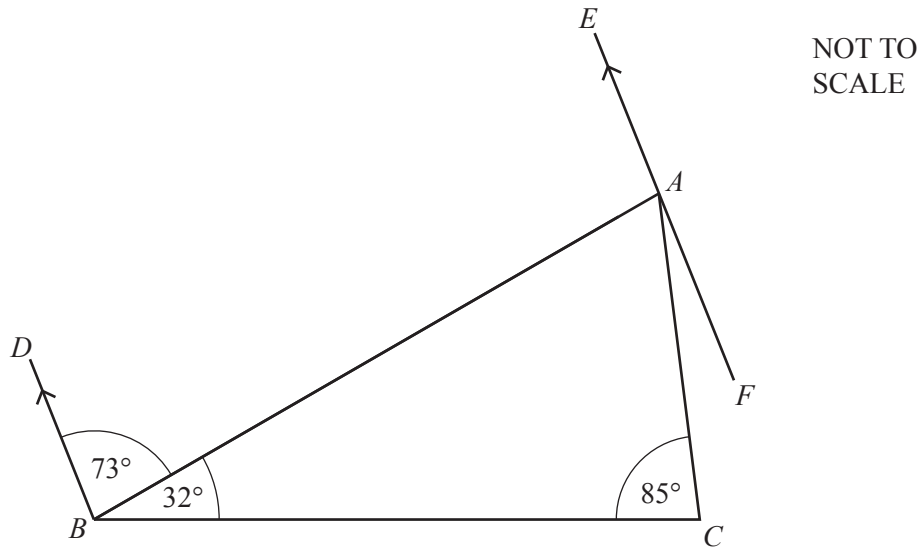
- 8 Find an expression for the n th term of each sequence.

- (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 = [1]

(b) Find angle FAC .

Angle FAC = [2]

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]

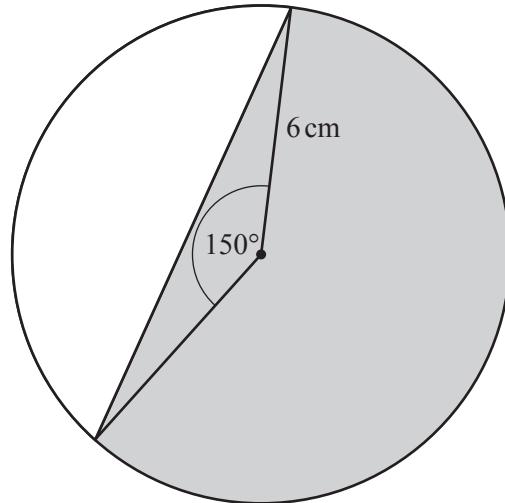
Questions 13 and 14 are printed on the next page.

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° .

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

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

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.