



Cambridge IGCSE™

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/21

Paper 2 (Extended)

October/November 2020

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. Blank pages are indicated.



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 . $A = \pi rl$

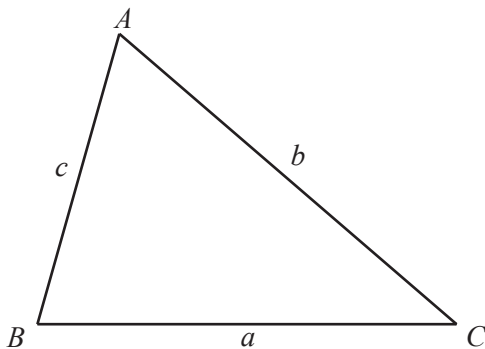
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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.

$$1 + 2 - 3 \times 4$$

..... [1]

- 2 Work out.

$$-48 \div -8$$

..... [1]

- 3 Simplify fully.

$$\frac{5x}{12} \times \frac{4}{15x}$$

..... [2]

- 4 Solve.

$$-3(1 - 4x) = 9$$

$x =$ [3]

- 5 Divide 120 in the ratio 3 : 5.

....., [2]

- 6 The mean of 5 numbers is 12.
The mean of 3 of these numbers is 8.

Find the mean of the other two numbers.

..... [3]

- 7 y varies inversely as x .
When $x = 3$, $y = 16$.

Find x when $y = 6$.

$x =$ [3]

8 $\mathbf{a} = \begin{pmatrix} -4 \\ -3 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$

(a) Find $\mathbf{a} - 3\mathbf{b}$.

$\begin{pmatrix} \\ \end{pmatrix}$ [2]

(b) Find the magnitude of $\begin{pmatrix} -4 \\ -3 \end{pmatrix}$.

..... [2]

9 A shop has a sale and all prices are reduced by 20%.

(a) The original price of a shirt is \$16.

Find the sale price of the shirt.

\$ [2]

(b) The sale price of a dress is \$40.

Find the original price of the dress.

\$ [2]

10 Factorise.

(a) $8x + 14$

..... [1]

(b) $8ax^2 - 6bx^3$

..... [2]

(c) $6ax + 9ay - 8bx - 12by$

..... [2]

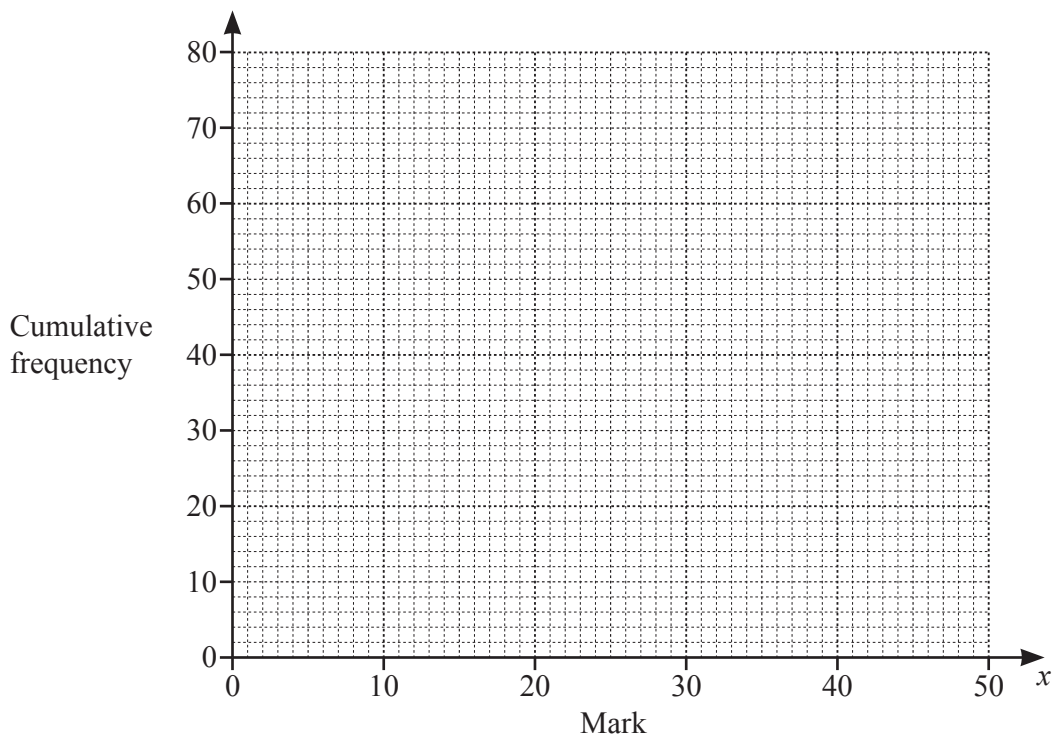
11 Work out $4^{-\frac{3}{2}}$.

..... [2]

12 The table shows the marks of 80 students in an examination.

Mark (x)	Frequency
$0 < x \leq 10$	8
$10 < x \leq 15$	16
$15 < x \leq 20$	25
$20 < x \leq 30$	17
$30 < x \leq 50$	14

(a) On the grid, draw a cumulative frequency curve to show this information.



[4]

(b) Use your graph to estimate the median mark of the students.

..... [1]

13 A is the point $(1, 7)$ and B is the point $(4, 1)$.

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

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

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 the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.