



Cambridge IGCSE™

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/21

Paper 2 (Extended)

October/November 2023

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 . $A = \pi rl$

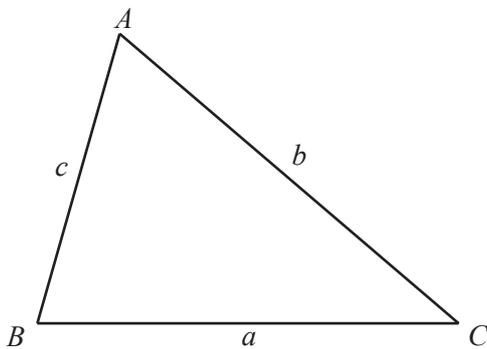
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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



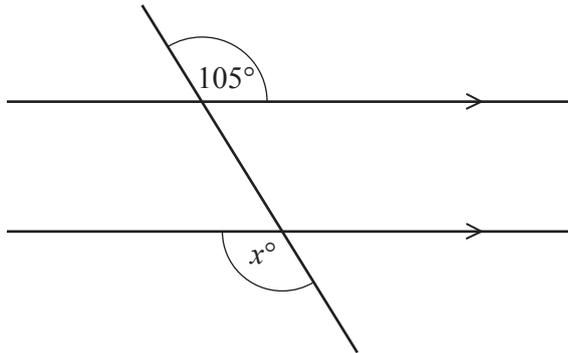
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

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

Answer **all** the questions.

1



NOT TO
SCALE

The diagram shows a straight line crossing two parallel lines.

Find the value of x .

$$x = \dots\dots\dots [1]$$

- 2 Priya rolls a die 10 times.
The table shows the results.

Score	1	2	3	4	5	6
Frequency	2	1	0	2	0	5

- (a) Find the mode.

..... [1]

- (b) Find the interquartile range.

..... [2]

- 3 A is the point $(0, 7)$ and B is the point $(-2, 1)$.
 M is the mid-point of AB .

Find the coordinates of M .

(..... ,) [2]

4 (a) Write 1.8796 correct to 4 significant figures.

..... [1]

(b) Work out $(\sqrt{5})^4$.

..... [1]

(c) x is an integer and $|x| \leq 1$.

Write down the values of x .

..... [1]

(d) Find the highest common factor (HCF) of 24 and 42.

..... [1]

5 A taxi fare, $\$F$, consists of a fixed charge of $\$x$ plus $\$0.65$ per kilometre travelled.

Find a formula for F for a journey of y kilometres.

..... [2]

6 Find the next term and the n th term of this sequence.

0 1 4 9 16

next term =

n th term = [3]

7 $J = h^3 + k^3$

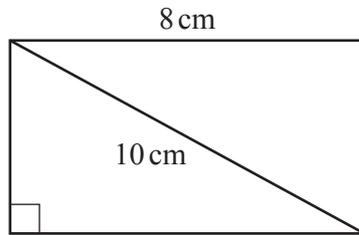
(a) Find the value of J when $h = 3$ and $k = 4$.

$J = \dots\dots\dots$ [2]

(b) Rearrange the formula to write h in terms of J and k .

$h = \dots\dots\dots$ [2]

8



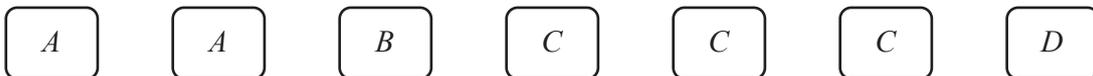
NOT TO SCALE

The length of the diagonal of the rectangle is 10 cm.
The length of the rectangle is 8 cm.

Work out the width of the rectangle.

$\dots\dots\dots$ cm [3]

9



Ulrich has these cards.
He picks 2 cards at random without replacement.

Find the probability that both cards have the letter A .

$\dots\dots\dots$ [2]

10 $5^w \div 5^{13} = 25$

Find the value of w .

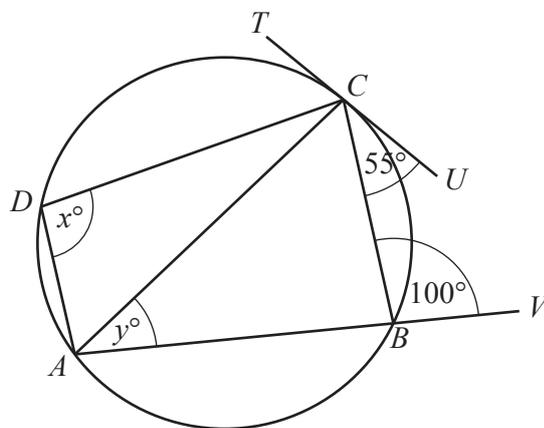
$w = \dots\dots\dots$ [1]

- 11 The volume of a cone is $18\pi \text{ cm}^3$.
The height of the cone is the same as the diameter of its base.

Find the radius of the base.

$\dots\dots\dots \text{ cm}$ [3]

12



NOT TO
SCALE

$ABCD$ is a cyclic quadrilateral.
 ABV is a straight line and TU is a tangent to the circle at C .

Find the value of x and the value of y .

$x = \dots\dots\dots$

$y = \dots\dots\dots$ [2]

- 13 y varies inversely as the square root of $(x + 1)$.
When $x = 8$, $y = 5$.

Find y in terms of x .

$$y = \dots\dots\dots [2]$$

- 14 The line L is perpendicular to the line $2y = 5 - x$ and passes through the point $(2, 3)$.

Find the equation of line L .

Give your answer in the form $y = mx + c$.

$$y = \dots\dots\dots [4]$$

Questions 15 and 16 are printed on the next page.

15 Rationalise the denominator.

$$\frac{\sqrt{5}}{\sqrt{5}-1}$$

..... [2]

16 $\log 20 + \log x = 2$

Find the value of x .

$x =$ [2]

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.