



Cambridge IGCSE™

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22

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 . $A = \pi rl$

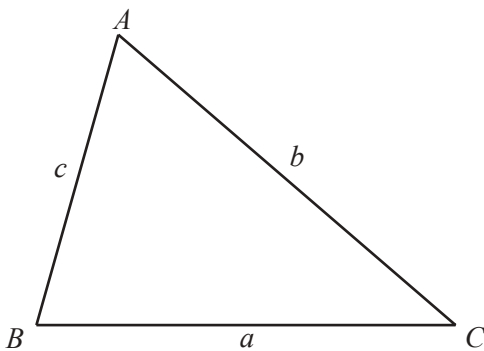
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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 Work out $-45 \div -15$.

..... [1]

2 Write 4049 correct to 2 significant figures.

..... [1]

3 Solve $7x - 5 = 37$.

$x =$ [2]

4 Find 2% of \$400.

\$ [1]

5 This is a list of test grades.

7 7 5 3 4 3 3 7 1 7 2 7

(a) Find the mode.

..... [1]

(b) Find the range.

..... [1]

6 (a) Work out $\frac{3}{4} - \frac{1}{5}$.

..... [2]

(b) Work out $2\frac{3}{4} \times 2\frac{2}{3}$.

Give your answer as a mixed number in its simplest form.

..... [3]

7 Write down an irrational number between 3 and 4.

..... [1]

8 Work out the highest common factor (HCF) of 60 and 42.

..... [1]

9 Expand $3p^2(4 - 3p)$.

..... [2]

- 10 (a) P is the point $(-5, 3)$ and Q is the point $(2, -1)$.

Find the coordinates of the mid-point of PQ .

(.....,) [2]

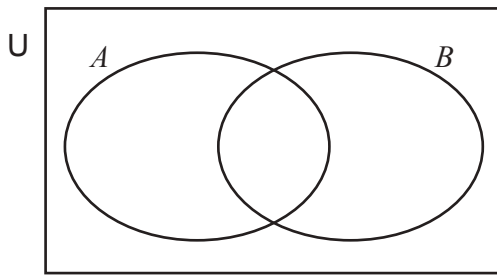
- (b) Line L is perpendicular to the line $y = 3x - 2$.
The point $(6, 1)$ is on line L .

Find the equation of line L .

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

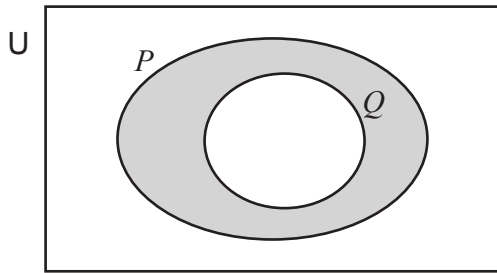
$y = \dots\dots\dots$ [3]

- 11 (a) On the Venn diagram, shade $(A \cup B)'$.



[1]

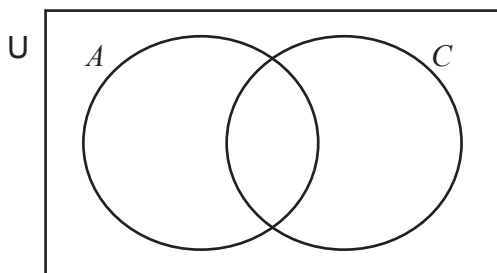
- (b) Use set notation to describe the shaded region.



..... [1]

- (c) There are 35 students in a class.
 The students are asked if they like athletics (A) or cricket (C).
 $n(A) = 15$
 $n(C) = 14$
 $n(A \cap C) = 5$

Complete the Venn diagram below by writing the number of elements in each subset.



[2]

- 12 Solve $x^2 - 2x - 6 = 0$.

Give your answer in the form $a \pm \sqrt{b}$ where a and b are integers.

..... [3]

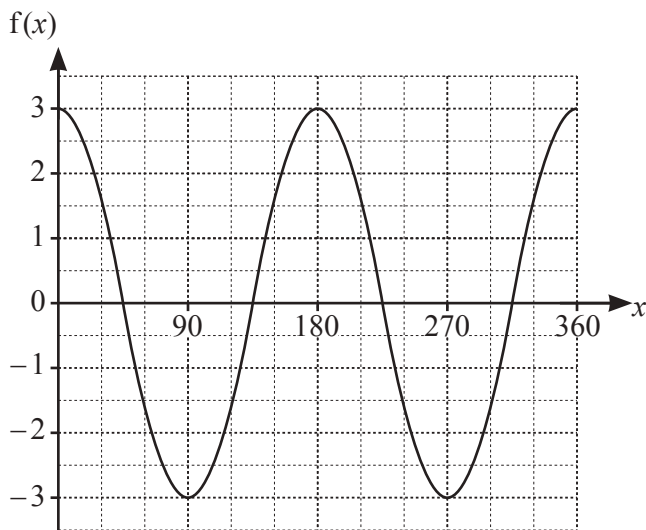
- 13 Find the magnitude of the vector $\begin{pmatrix} -6 \\ 8 \end{pmatrix}$.

..... [2]

- 14 Solve $\frac{x+1}{x-1} - \frac{1}{3} = 0$.

$x =$ [3]

15



The graph shows $f(x) = a \cos(bx)^\circ$.

- (a) Find the value of a and the value of b .

$a =$

$b =$ [2]

- (b) Write down the period of $f(x)$.

..... [1]

Question 16 is printed on the next page.

16 (a) $\log_a 64 = 2$

Write down the value of a .

..... [1]

(b) Simplify $\log 3 + 3 \log 2 - \log 12$.

..... [3]

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.