



# Cambridge IGCSE™

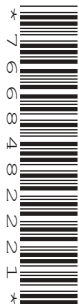
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NAME

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/22**

Paper 2 (Extended)

**February/March 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  $l$ .  $A = \pi rl$

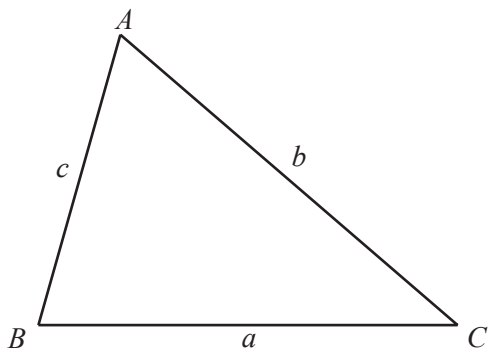
Curved surface area,  $A$ , of sphere of radius  $r$ .  $A = 4\pi r^2$

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 71 73 75 77 79 81 87

From this list of numbers write down

(a) a prime number

..... [1]

(b) a square number.

..... [1]

2 Work out 10% of 250.

..... [1]

3 Work out.

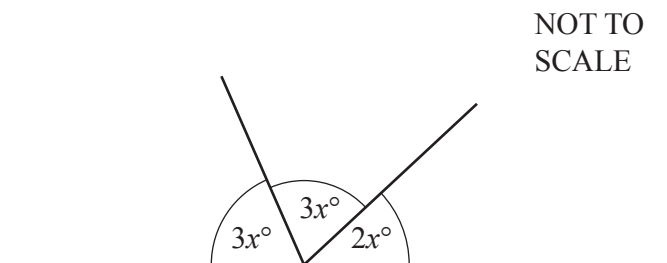
(a)  $2.04 \times 20$

..... [1]

(b)  $\frac{0.09}{0.003}$

..... [1]

4



The diagram shows three angles on a straight line.

Find the value of  $x$ .

$x =$  ..... [2]

- 5 A bag contains 7 black balls, 2 red balls and 4 yellow balls.  
One ball is chosen at random from the bag.

Find the probability that the ball chosen is yellow.

..... [1]

- 6 Solve.

$$5x - 10 = 3x - 6$$

$x =$  ..... [2]

- 7 Solve.

$$4x - 3 \geq 9$$

..... [2]

- 8  $p = 2 \times 10^3$        $q = 8 \times 10^{-5}$

Work out the following, giving each answer in standard form.

- (a)  $pq$

..... [2]

- (b)  $\frac{p}{q}$

..... [2]

- 9 The size of one exterior angle of a regular polygon is  $24^\circ$ .

Find the number of sides of this polygon.

..... [2]

- 10 The point  $A$  has coordinates  $(2, 9)$  and the point  $B$  has coordinates  $(5, 3)$ .

Find the length of  $AB$ .

Give your answer in surd form.

..... [3]

- 11 Solve the simultaneous equations.

$$5x - 2y = 12$$

$$3x + 4y = 2$$

$$x = \text{.....}$$

$$y = \text{.....} [3]$$

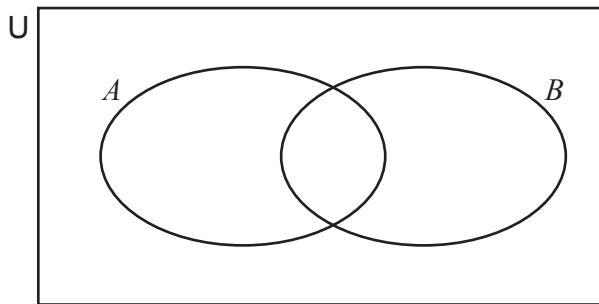
12 Expand the brackets and simplify.

$$(4x - 3y)(4x + 3y)$$

..... [2]

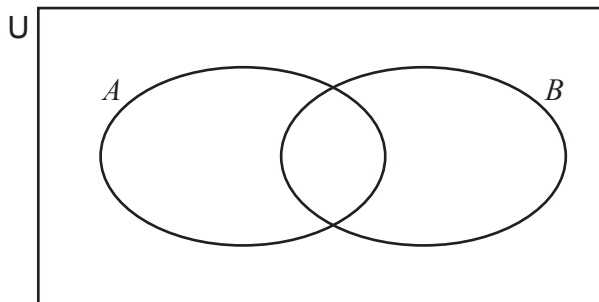
13 Shade the given sets in each of these Venn diagrams.

(a)  $A' \cup B'$



[1]

(b)  $(A \cap B)'$



[1]

14 Make  $x$  the subject of  $A = \frac{3(x+y)}{x}$ .

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

15 Factorise.  
 $5x^2 - xy - 4y^2$

$$\dots\dots\dots [2]$$

16 The volume of a hemisphere with radius  $r$  cm is  $\frac{16}{3}\pi \text{ cm}^3$ .

Find the value of  $r$ .

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

**Question 17 is printed on the next page.**

- 17 An unbiased die is numbered 2, 3, 3, 4, 5, 6.  
Wendy rolls the die three times.

Find the probability that Wendy rolls a prime number at least twice.

..... [4]

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