Cambridge Assessment International Education

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7668482221

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.

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Formula List

For the equation $ax^2 + bx + c = 0$ $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Curved surface area, A, of cylinder of radius r, height h. $\quad A = 2\pi rh$

Curved surface area, A, of cone of radius r, sloping edge l. $\quad A = \pi rl$

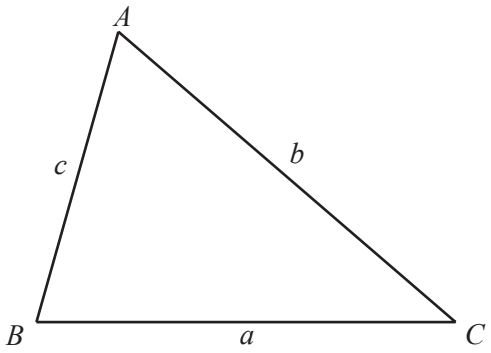
Curved surface area, A, of sphere of radius r. $\quad A = 4\pi r^2$

Volume, V, of pyramid, base area A, height h. $\quad V = \frac{1}{3}Ah$

Volume, V, of cylinder of radius r, height h. $\quad V = \pi r^2 h$

Volume, V, of cone of radius r, height h. $\quad V = \frac{1}{3}\pi r^2 h$

Volume, V, of sphere of radius r. $\quad V = \frac{4}{3}\pi r^3$



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

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

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

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) 2.04×20

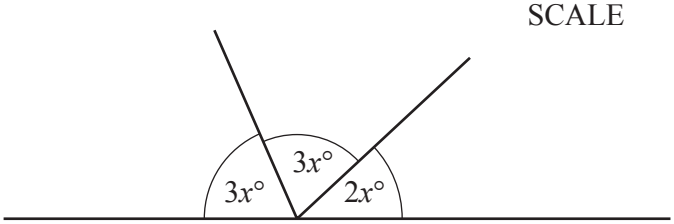
..... [1]

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

..... [1]

4

NOT TO SCALE



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.

$4x - 3 \geqslant 9$

..... [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]

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9 The size of one exterior angle of a regular polygon is 24°.

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.

$$5x - 2y = 12$$
$$3x + 4y = 2$$

$x =$ .....

$y =$ ..... [3]

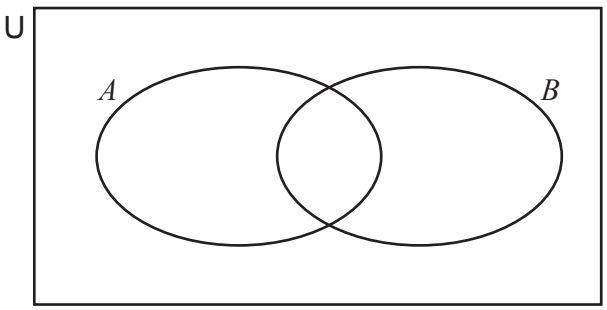
12 Expand the brackets and simplify.

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

..... [2]

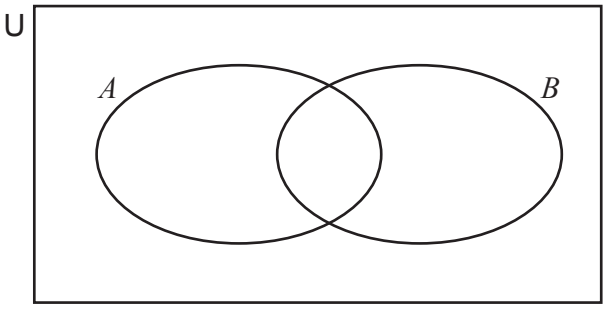
13 Shade the given sets in each of these Venn diagrams.

(a) $A' \cup B'$



[1]

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



[1]

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

$x =$ ..... [3]

15 Factorise.

$5x^2 - xy - 4y^2$

..... [2]

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

Find the value of r.

$r =$ ..... 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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