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

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. $A = \pi rl$

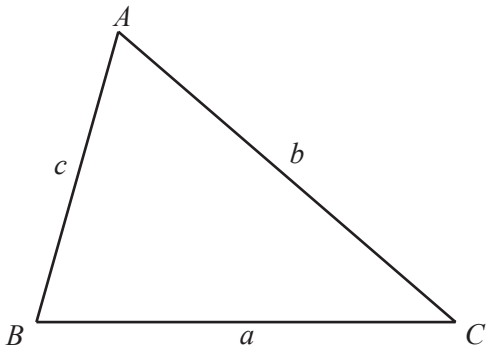
Curved surface area, A, of sphere of radius r. $A = 4\pi r^2$

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



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

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

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

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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

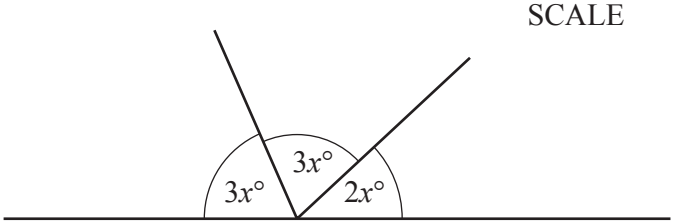
..... [1]

(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]

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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]

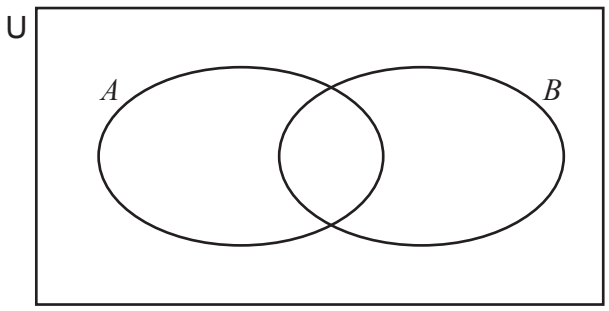
12 Expand the brackets and simplify.

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

..... [2]

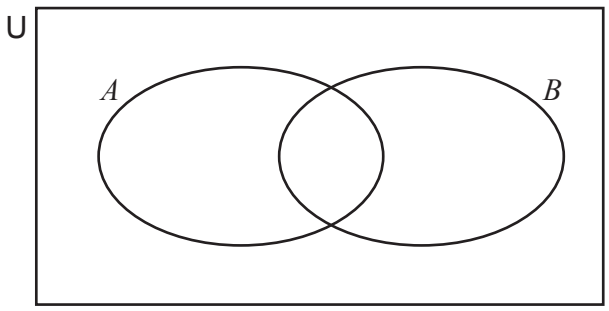
13 Shade the given sets in each of these Venn diagrams.

(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.

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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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