



CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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0607/23

May/June 2023

45 minutes

You will need: Geometrical instruments

- 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.

- 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 . $A = \pi rl$

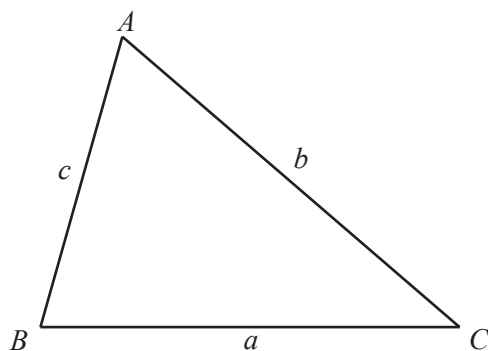
Curved surface area, A , of sphere of radius r . $A = 4\pi r^2$

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



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

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

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

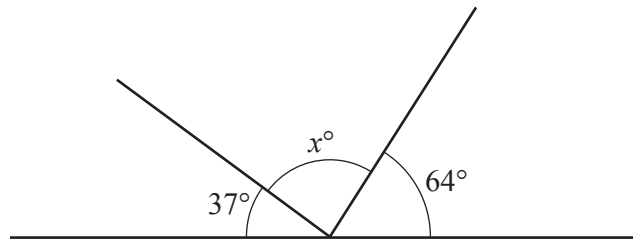
Answer **all** the questions.

- 1 29 31 41 49 51 59

From this list, write down **all** the numbers that are prime numbers.

..... [2]

2



NOT TO
SCALE

Find the value of x .

$x =$ [1]

- 3 Work out.

(a) 0.04×0.06

..... [1]

(b) $\frac{0.02}{0.8}$

..... [1]

- 4 A bag contains 3 blue balls and 7 green balls.
One ball is chosen at random.

Find the probability the ball chosen is

- (a) white

..... [1]

- (b) not blue.

..... [1]

- 5 Change 12 millimetres into metres.

..... m [1]

- 6 Expand.
 $3x(2x^4 - 5)$

..... [2]

- 7 (a) Write 0.003 08 in standard form.

..... [1]

- (b) Work out $(7 \times 10^6) \times (3 \times 10^{-8})$.

Give your answer in standard form.

..... [2]

- 8 Find the next term and the n th term for this sequence.

1, 7, 17, 31, 49, ...

next term

n th term [3]

- 9 The total cost of 5 pens and 7 pencils is \$6.75 .
Each pencil costs \$0.45 .

Find the cost of one pen.

\$ [3]

- 10 Write 48 as a product of its prime factors.

..... [2]

- 11 (a) The range of ten numbers is 30.
The range of eight other numbers is 13.

Find the smallest possible value of the range of all eighteen numbers.

..... [1]

- (b) The mean of twelve numbers is 25.
The mean of ten of these numbers is 16.

Find the mean of the other two numbers.

..... [2]

12 Factorise fully.

(a) $(3y)^2 - 16$

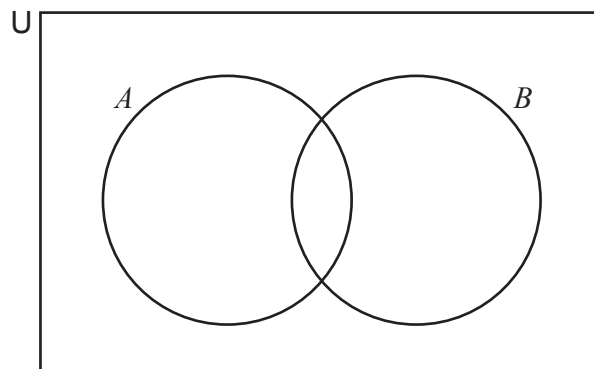
..... [1]

(b) $15ab - 1 - 3a + 5b$

..... [2]

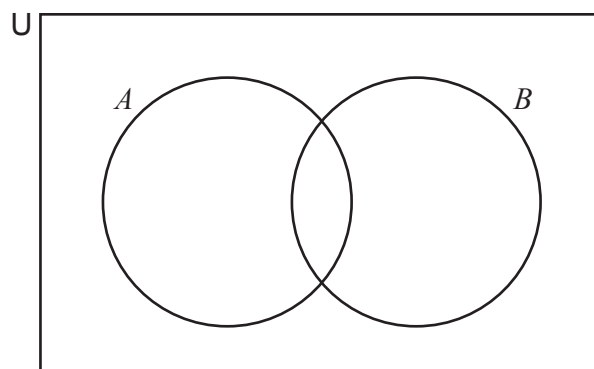
13 Shade the given region on the Venn diagram.

(a) $A' \cap B'$



[1]

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



[1]

- 14** An archer shoots three arrows at a target.

The probability that she hits the target with each arrow is $\frac{7}{10}$.

Find the probability she hits the target exactly twice.

..... [3]

- 15** Rearrange the equation to make x the subject.

$$A + 4y = A(2 - 3x)$$

$x =$ [3]

Question 16 is printed on the next page.

- 16 The point A has coordinates $(2, 3)$ and the point B has coordinates $(6, 5)$.
The point C lies on the line AB .
The point D has coordinates $(2, 5.5)$.
 CD is perpendicular to AB .

Find the coordinates of C .

(..... ,) [5]

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