Cambridge IGCSE™

CANDIDATE NAME
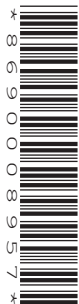
CENTRE NUMBER

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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/12**

Paper 1 (Core) **February/March 2022**

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 [ ].

[Turn over

Formula List

Area, A, of triangle, base b, height h. $\qquad\qquad A = \frac{1}{2}bh$

Area, A, of circle, radius r. $\qquad\qquad A = \pi r^2$

Circumference, C, of circle, radius r. $\qquad\qquad C = 2\pi r$

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

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

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

Volume, V, of prism, cross-sectional area A, length l. $\qquad\qquad V = Al$

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

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

Volume, V, of cone of radius r, height h. $\qquad\qquad V = \frac{1}{3}\pi r^2 h$
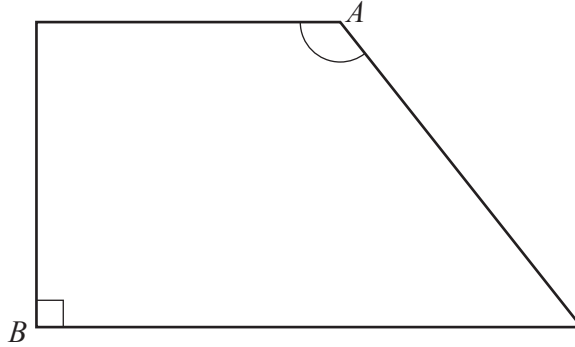
Volume, V, of sphere of radius r. $\qquad\qquad V = \frac{4}{3}\pi r^3$

Answer **all** the questions.

1   Write $\frac{1}{2}$ as a percentage.

.... % [1]

2

Write down the mathematical name for

(a) angle A,

.... [1]

(b) angle B.

.... [1]

3   Write down the second triangle number.

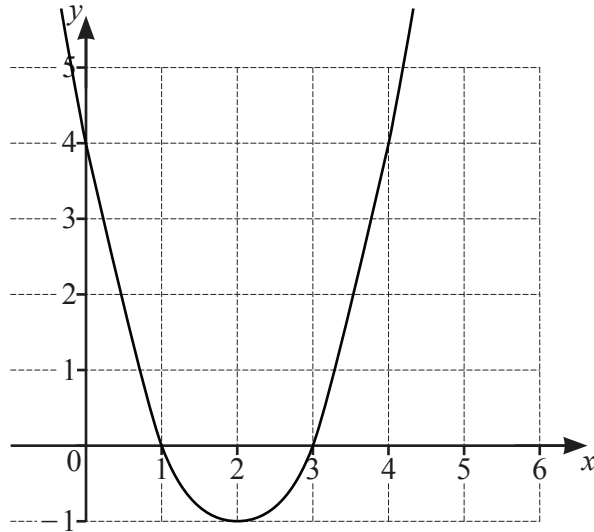... [1]

4   Complete the mapping diagram.
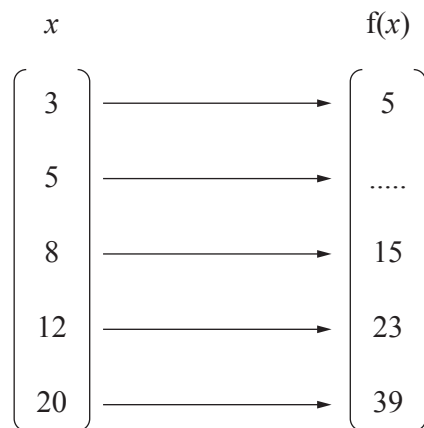
[1]

5

(a) Plot the point (3, 4). [1]

(b) Write down the coordinates of one of the points where the curve crosses the *x*-axis.

(....................... , ...) [1]

6 Work out.

$$2 \times (3+4)$$

.... [1]

7 Work out.

$$\sqrt[3]{8} + 4^2$$

.... [2]

8
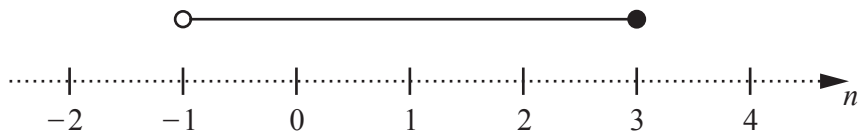
Complete the statement.

This number line shows the inequality $-1 < n$ .... 3.

[1]

9 These are the scores of 10 students in a mathematics test.

29   17   9   11   11   24   9   31   11   19

(a) Find the mode.

.... [1]

(b) Work out the median.

.... [2]

10 Work out 20% of 45.

.... [1]

11 $A = \{x \mid x$ is a positive integer less than 10 and x is a multiple of 4$\}$

List the elements of set A.

.... [1]

12 Sam and his brother share $42 in the ratio $2:5$.
Sam has the larger share.

Find the amount Sam has.

$ .... [2]

13 Sara pays $1 per day for her mobile phone.
In one week she can make 100 minutes of free calls.
All other calls are charged at 50 cents per minute.

Work out the **total** amount Sara pays in one week when she makes 120 minutes of calls.

$ .... [3]

14 (a) Alys rolls a fair six-sided die.

Find the probability that Alys rolls a 2.

.... [1]

(b) Elora has a six-sided die.
She thinks that her die is biased.
She rolls it 100 times to test it.

(i) Complete the table.

Number on die	1	2	3	4	5	6
Frequency	5	15	18	16	16	
Relative frequency	0.05	0.15				

[2]

(ii) Write down the number Elora is most likely to get when she rolls her die.

.... [1]

15 Factorise completely.

$$24xy + 8x$$

.... [2]

16 Simplify.

$$x^2 \times x$$

.... [1]

17 Write down the highest common factor (HCF) of 5 and 7.

.... [1]

18 *A* is the point $(3, 8)$ and *B* is the point $(5, -2)$.

Find the coordinates of the mid-point of *AB*.

(...................... , ...) [2]

19 Write down the two rational numbers from this list.

$$\frac{2}{3} \qquad \sqrt{3} \qquad 2 \qquad \pi$$

.... [1]

20 A bag contains 5 silver coins and 2 gold coins.
Gill takes a coin at random from the bag and then replaces it.
She does this a second time.

Find the probability that both coins are gold.

.... [2]

Questions 21, 22 and 23 are printed on the next page.

21
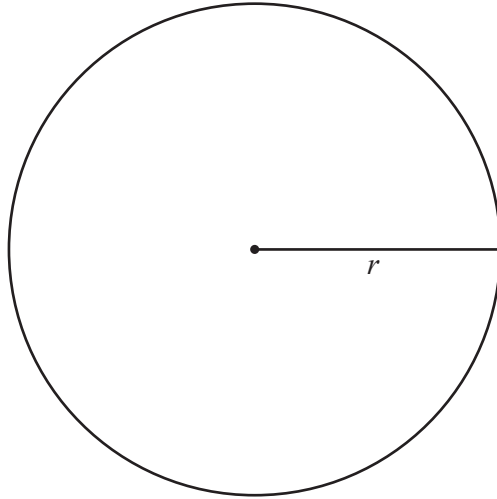
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The area of the circle is $16\pi\,\text{cm}^2$.

Find the radius, r, of the circle.

.... cm [2]

22 In triangle *ABC*, $AB = AC = x\,\text{cm}$.
BC is 4 cm longer than *AB*.

Find an expression, in terms of x, for the perimeter of this triangle.
Give your answer in its simplest form.

.... [2]

23 Work out $(4 \times 10^{-3}) \times (3 \times 10^{-5})$.
Give your answer in standard form.

.... [2]