# Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER
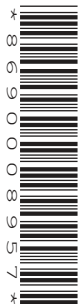
**CAMBRIDGE INTERNATIONAL MATHEMATICS**                                  **0607/12**

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 [ ].

This document has **8** pages.

## Formula List

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

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

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

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

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

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

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

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

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

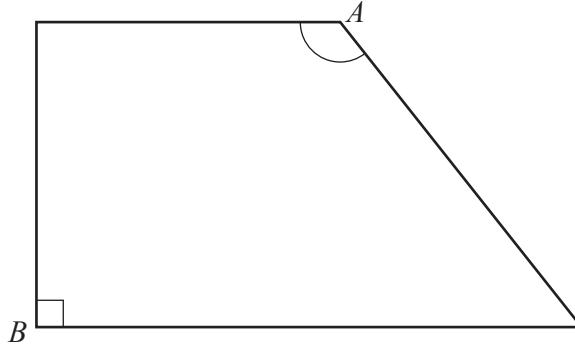Volume, $V$, of cone of radius $r$, height $h$. $\qquad$ $V = \frac{1}{3}\pi r^2 h$

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

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.

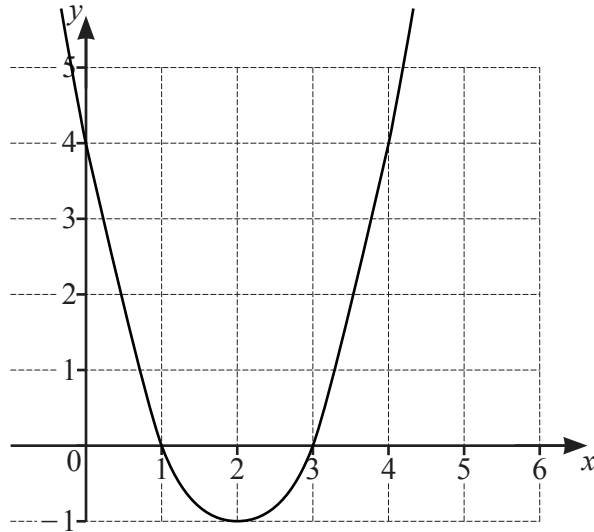................................................ [1]

**4** Complete the mapping diagram.
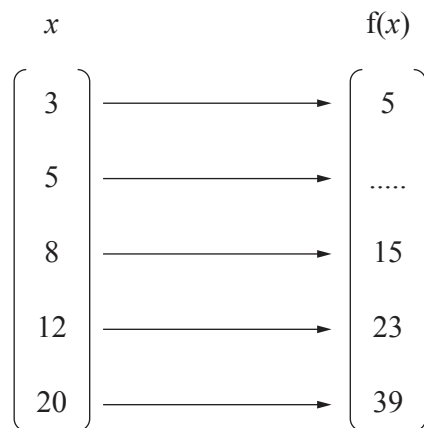


[1]

**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**
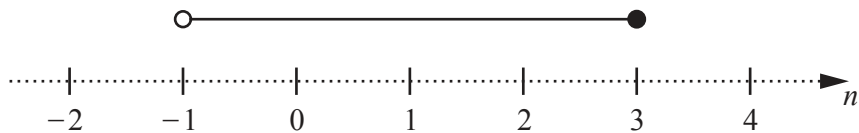


Complete the statement.

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]

**[Turn over**

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.**

0607/12/F/M/22  **[Turn over**

**21**
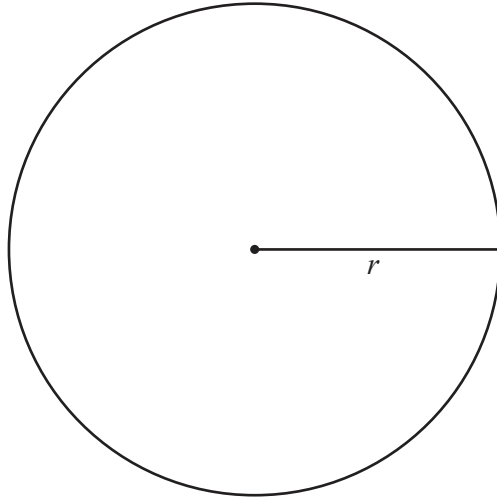


NOT TO SCALE

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

Find the radius, $r$, of the circle.

.............................................. cm  [2]

**22** In triangle $ABC$, $AB = AC = x$ 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]