Cambridge Assessment International Education

# Cambridge IGCSE™

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*3858295503*

**CAMBRIDGE INTERNATIONAL MATHEMATICS** **0607/12**

Paper 1 (Core) **October/November 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

| | |
|---|---|
| Area, $A$, of triangle, base $b$, height $h$. | $A = \frac{1}{2}bh$ |
| Area, $A$, of circle, radius $r$. | $A = \pi r^2$ |
| Circumference, $C$, of circle, radius $r$. | $C = 2\pi r$ |
| 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 prism, cross-sectional area $A$, length $l$. | $V = Al$ |
| 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 $r$. | $V = \frac{4}{3}\pi r^3$ |

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Answer **all** the questions.

**1** Write down the mathematical name for a line joining the centre of a circle to its circumference.

..... [1]

**2** Work out how many complete weeks there are in 60 days.

..... [1]

**3** Write down the rule for continuing this sequence.

3, 6, 12, 24, 48, …

..... [1]

**4** A person has a mass of 83 000 grams.

Find the mass of the person in kilograms.

..... kg [1]

**5** It costs 50 cents to post one letter.

Work out the cost, in dollars, of posting 160 letters.

$ ..... [2]

**6** Write down the value of the cube root of 1000.

..... [1]

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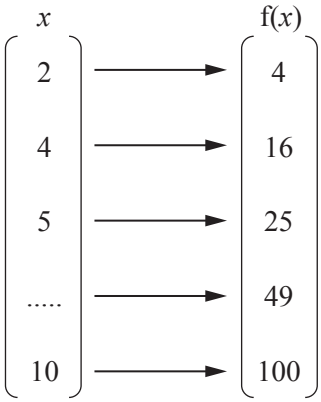
**7** The table shows examples of types of data collected about members of a gym.

Put a tick (✓) in each row to show whether the data is Discrete or Continuous.

| Type of data | Discrete | Continuous |
|---|---|---|
| Height | | |
| Total time spent at gym | | |
| Number of visits to gym | | |
| Cost of membership | | |

[2]

**8** Complete the mapping diagram.




[1]

**9** Work out.

$15 \div (4 - 9)$

..... [1]

**10** A cuboid has dimensions 10 cm, 4 cm and 2 cm.

Work out the volume of the cuboid.

..... $cm^3$ [2]

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**11** $\cup = \{x \mid x \text{ is an even number where } 2 < x < 10\}$

List the elements of the set $\cup$.

..... [1]

**12** These are the ages in years of 10 people.

28 32 33 33 34 35 36 37 41 45

Find the interquartile range.

..... years [2]

**13** Orange paint is made by mixing 2 litres of red paint with 10 litres of yellow paint.
Jasmine uses 3 litres of red paint to make orange paint.

Work out the number of litres of yellow paint she uses.

..... [2]

**14** Tom invests \$400 at a rate of 2% per year simple interest.

Work out the total value of the investment at the end of one year.

\$ ..... [2]

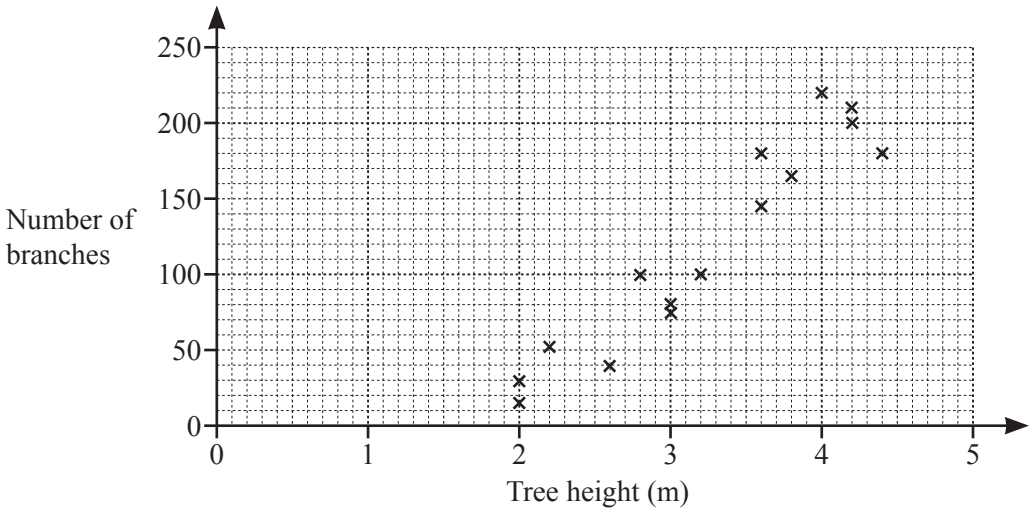
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**15** The interior angles of a polygon add up to 720°.

Find the number of sides of the polygon.

..... [2]

**16** The scatter diagram shows the relationship between the number of branches and the heights of 15 trees.




The mean height of a tree is 3.2 m and the mean number of branches is 120.

Use this information to draw the line of best fit. [2]

**17** Solve.

$$5 - 3x = 4x + 19$$

$x =$ ..... [2]

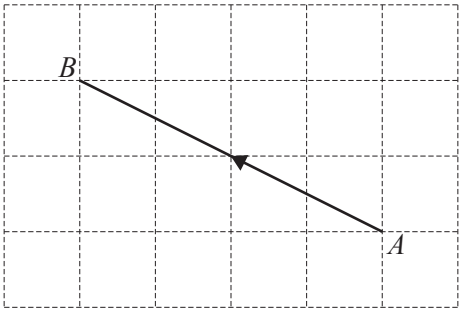
**18** The area of the European continent is $1.02 \times 10^7$ km$^2$.

Write this area as an ordinary number.

..... km$^2$ [1]

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**19**




Point $A$ is translated to point $B$ by the vector $\begin{pmatrix} c \\ d \end{pmatrix}$.

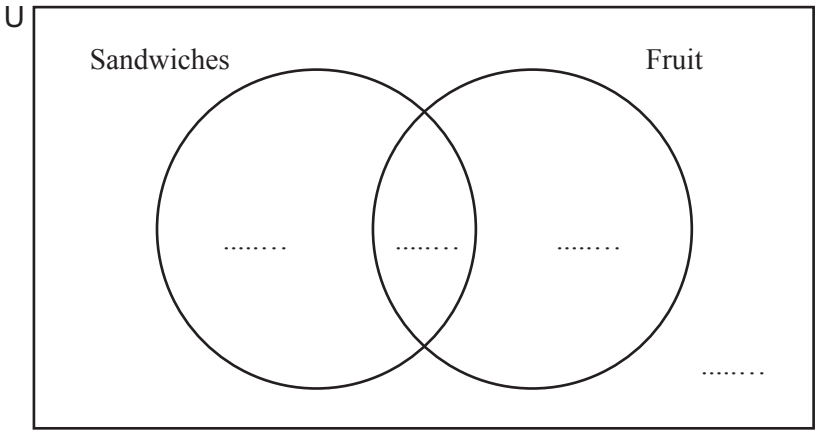
Find the value of $c$ and the value of $d$.

$c =$ .....

$d =$ ..... [2]

**20** 120 students are asked what they eat for lunch.
30 students eat sandwiches.
40 students eat fruit.
70 students did not eat sandwiches and did not eat fruit.

Complete the Venn diagram.




[2]

**21** An unbiased 6-sided spinner, numbered 1, 2, 3, 4, 5, 6, is spun twice.

Find the probability that the spinner lands on the number 4 both times.

..... [2]

**Questions 22, 23 and 24 are printed on the next page.**

**22** Solve the simultaneous equations.

$$3x + y = 5$$
$$4x - y = 9$$

$x =$ .....

$y =$ ..... [2]

**23** A train leaves station X at 11 10 and travels at an average speed of 200 km/h.
The train arrives at station Y at 11 22.

Work out the distance between station X and station Y.

..... km [3]

**24** Write as a single fraction.

$$\frac{3a}{8} + \frac{a}{4}$$

..... [2]

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