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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 [].

This document has 8 pages.

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 .

$$V = \frac{1}{3}\pi r^2 h$$

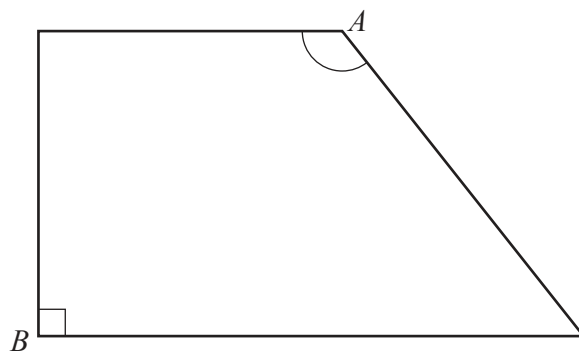
Volume, V , of sphere of radius r .

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

3Answer **all** the questions.

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

..... % [1]

2

Write down the mathematical name for

- (a) angle A ,

..... [1]

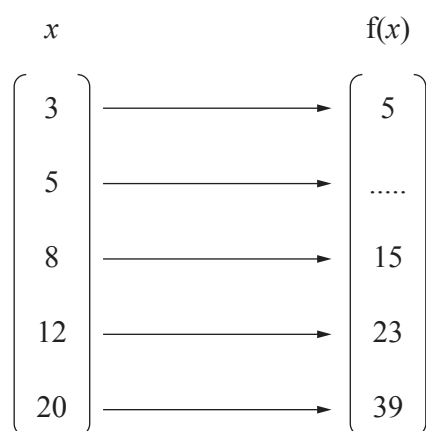
- (b) angle B .

..... [1]

- 3** Write down the second triangle number.

..... [1]

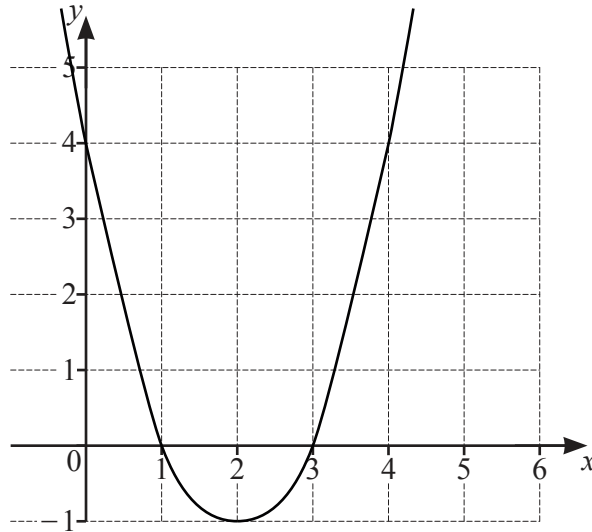
- 4** Complete the mapping diagram.



[1]

4

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.

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

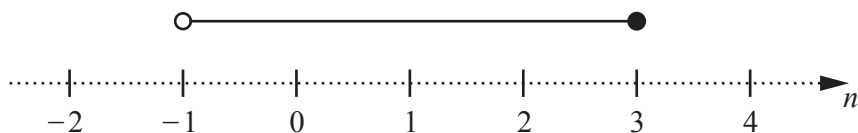
..... [1]

7 Work out.

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

..... [2]

8



Complete the statement.

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

[1]

5

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

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]

6

- 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]

7

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.

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

..... [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.

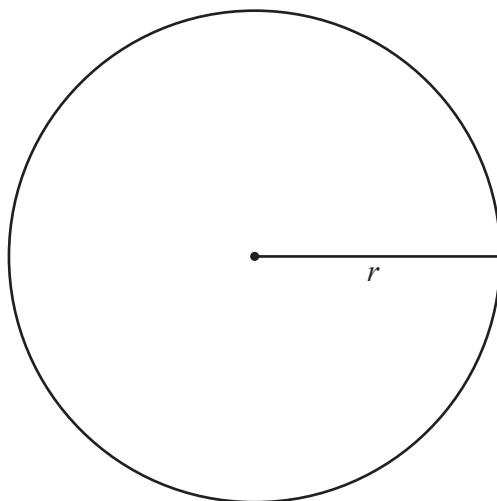
Find the probability that both coins are gold.

..... [2]

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

8

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]

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