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CAMBRIDGE INTERNATIONAL MATHEMATICS**0607/12**

Paper 1 (Core)

February/March 2021**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 .

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

3

Answer **all** the questions.

- 1 Write the number seven million twenty thousand in figures.

..... [1]

- 2 Write 48% as a decimal.

..... [1]

- 3 In Paris, the average temperature ($^{\circ}\text{C}$) and the average rainfall (mm) for each month are shown.

Month	Average temperature ($^{\circ}\text{C}$)	Average rainfall (mm)
January	5	56
February	6	46
March	9	36
April	11	43
May	15	56
June	16	51
July	20	56
August	20	61
September	16	51
October	12	50
November	7	50
December	5	51

- (a) Write down the average temperature in Paris for July.

..... $^{\circ}\text{C}$ [1]

- (b) Write down the month with the highest average rainfall.

..... [1]

- 4 A polygon has 6 sides.

Write down the mathematical name of this polygon.

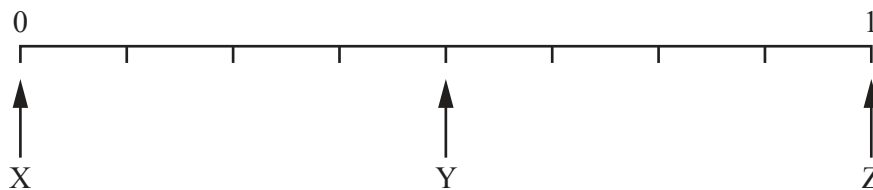
..... [1]

- 5 Write 45.1665 correct to 2 decimal places.

..... [1]

4

- 6 The scale shows the probability of events X, Y and Z.



- (a) Complete the following statement.

Event is impossible. [1]

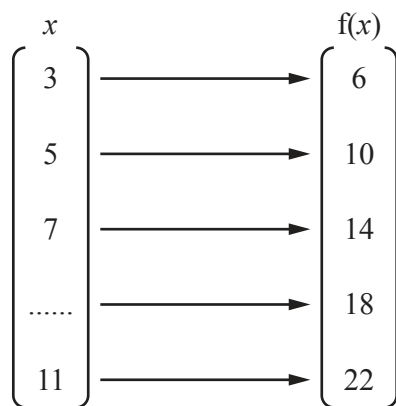
- (b) Event E is less likely than event Y.

On the scale, draw an arrow to show the probability of event E. [1]

- 7 Work out $\frac{1}{4}$ of 200.

..... [1]

- 8 Complete the mapping diagram.



[1]

- 9 How many seconds are there in 30 minutes?

..... seconds [1]

- 10 Insert one pair of brackets to make this statement correct.

$$1 + 2 \times 3 + 1 = 9$$

[1]

5

- 11** Find the value of $7x - 2y$ when $x = 2$ and $y = 5$.

..... [2]

- 12** Write the ratio $6 : 9$ in its simplest form.

..... : [1]

- 13** These are the first six terms of a sequence.

x 2 9 16 23 y

- (a)** Find the value of x and the value of y .

$x =$

$y =$ [2]

- (b)** Explain why 42 is not in this sequence.

.....
 [1]

- 14** David buys 12 pens for \$2.40 .

Work out the cost of 18 pens.

\$ [2]

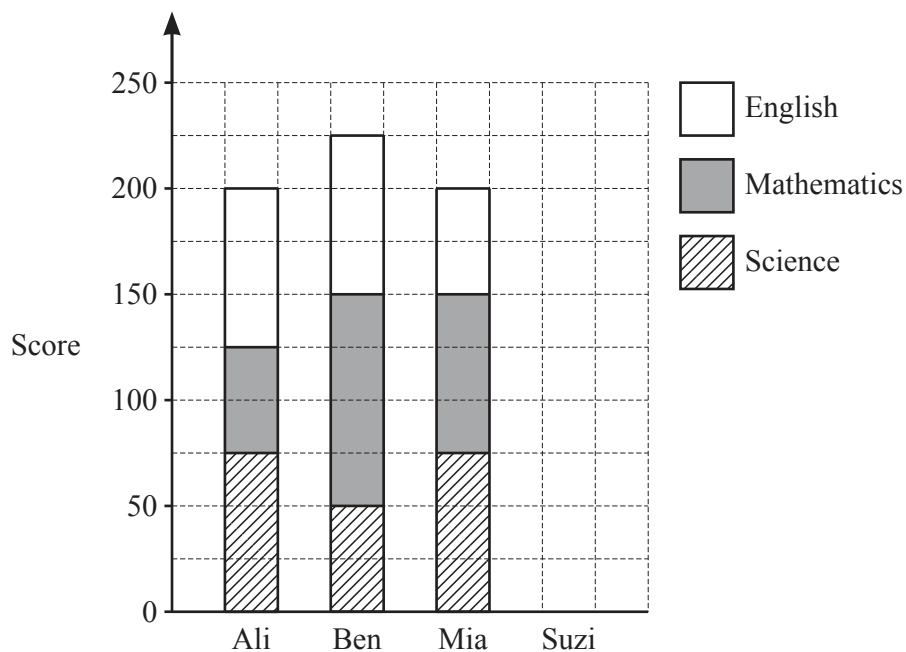
- 15** Carla walks 6 km in 90 minutes.

Find her average speed in km/h.

..... km/h [2]

6

16



Four students take tests in English, mathematics and science. The compound bar chart shows the scores for three students.

(a) Work out Mia's score for English.

..... [1]

(b) Suzi scored 75 in each test.

Complete the compound bar chart to show Suzi's scores. [1]

(c) Write down the name of the student with the highest mathematics score.

..... [1]

17 Factorise fully.

$$14y^2 - 35y$$

..... [2]

18 Find the value of $(3 \times 10^4) \times (5 \times 10^2)$, giving your answer in standard form.

..... [2]

- 19** A spinner has four sections.
Each section is a different colour.
It is spun 400 times and the colour it lands on is recorded in the table.

Colour	Red	Green	Blue	White
Frequency	81	126	119	74

- (a) Write down an estimate for the probability of the spinner landing on green.

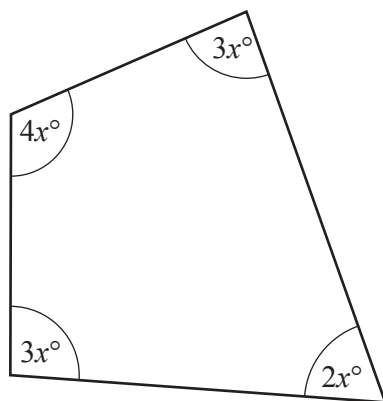
..... [1]

- (b) The spinner is spun 2000 times.

Estimate the number of times the spinner lands on red.

..... [2]

20



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SCALE

Work out the value of x .

$x =$ [2]

- 21** Solve $20 > 6 + 2x$.

..... [2]

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

8

- 22 The line $y = kx + 5$ is parallel to the line $2y - 6x + 5 = 0$.

Find the value of k .

$$k = \dots\dots\dots [1]$$

- 23 Solve the simultaneous equations.

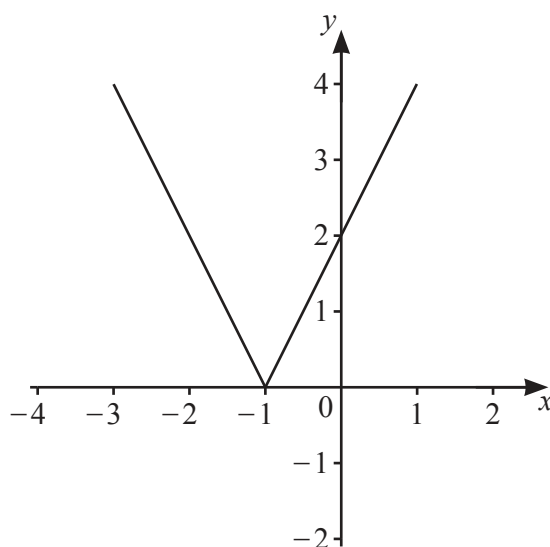
$$-5a + 2b = -28$$

$$6a - 2b = 36$$

$$a = \dots\dots\dots$$

$$b = \dots\dots\dots [2]$$

24



The diagram shows the graph of $y = f(x)$.

On the same diagram, sketch the graph of $y = f(x + 1)$.

[1]

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