Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

9192120993

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.

[Turn over

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

Answer **all** the questions.

1 Write the number seven million twenty thousand in figures.

7 000,000
20 ,000
7020,000

7020,000 ..... [1]

2 Write 48% as a decimal.

$\frac{48}{100}$

0.48 ..... [1]

3 In Paris, the average temperature (°C) and the average rainfall (mm) for each month are shown.

Month	Average temperature (°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.

20 ..... °C [1]

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

August ..... [1]

4 A polygon has 6 sides.

Write down the mathematical name of this polygon.

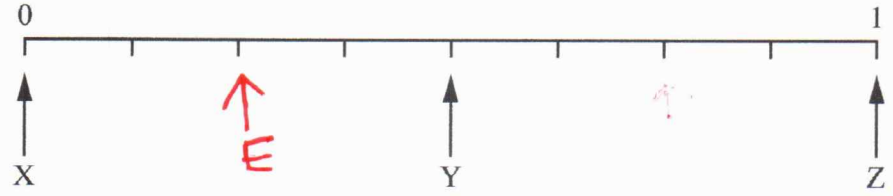
hexagon ..... [1]

5 Write 45.1665 correct to 2 decimal places.

45.1665

45.17 ..... [1]

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



(a) Complete the following statement.

Event ..... X ..... is impossible. [1]

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

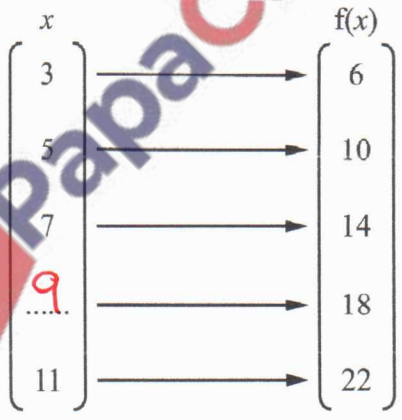
On the scale, draw an arrow to show the probability of event E. [1]

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

$\frac{200}{4} = 50$

50 ..... [1]

8 Complete the mapping diagram.



[1]

9 How many seconds are there in 30 minutes?

30×60

1800 ..... seconds [1]

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

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

[1]

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

$7(2)-2(5)$
$=14-10$
$=4$

4 [2]

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

6 : 9
2 : 3

2 : 3 [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.

$2-7=-5$
$23+7=30$

$x =$ −5
$y =$ 30 [2]

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

Values in the sequence are not multiples of 7 [1]

14 David buys 12 pens for $2.40.

Work out the cost of 18 pens.

$18\left(\frac{2.40}{12}\right)=$
$18(0.2)=3.6$

$ 3.6 [2]

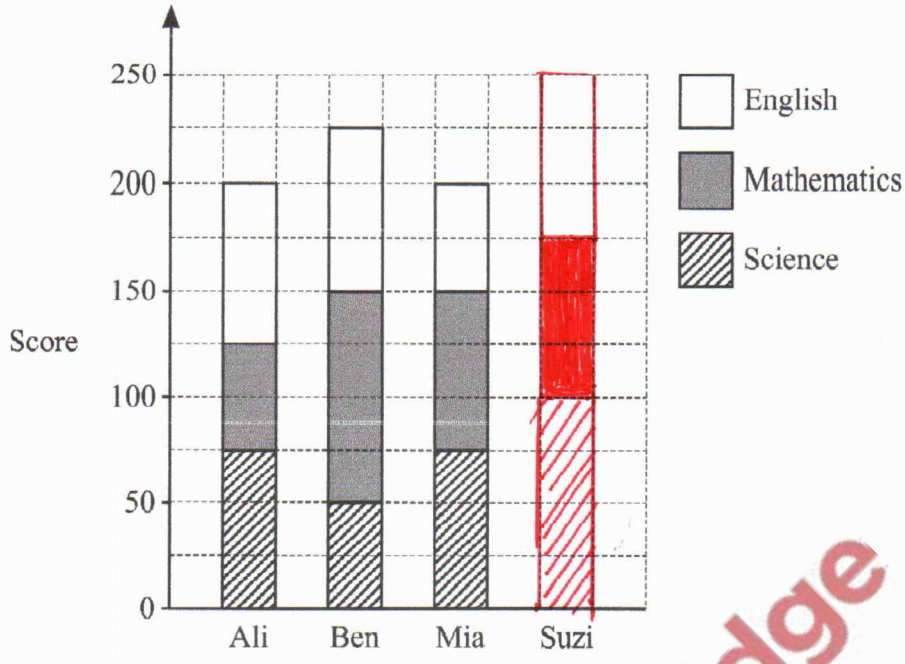
15 Carla walks 6 km in 90 minutes.

Find her average speed in km/h.

Speed $=\frac{D}{T}$ $\frac{6\text{km}}{1.5\text{hrs}}=4\text{km/h}$

4 km/h [2]

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.

200 − 150 = 50

50 ..... [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.

Ben ..... [1]

17 Factorise fully.

$14y^2 - 35y$

7y(2y − 5)

7y(2y − 5) ..... [2]

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

$3 \times 10^4 \times 5 \times 10^2$

15×10^6, 1.5×10^7

1.5×10^7 ..... [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.

$\frac{126}{400} = \frac{63}{200}$ $\frac{126}{400}$ ..... [1]

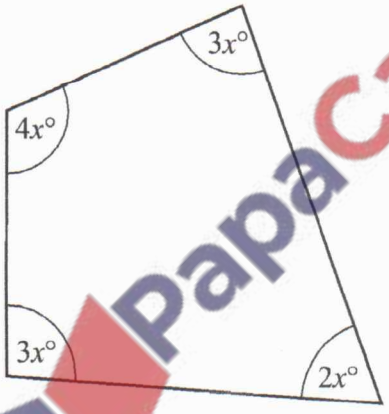
(b) The spinner is spun 2000 times.

Estimate the number of times the spinner lands on red.

$\frac{81}{400} \times \frac{5}{2000} = 405$

405 ..... [2]

20



NOT TO SCALE

Work out the value of x.

$180(n-2)$
$180(4-2)$
$180 \times 2 = 360$
$4x + 3x + 3x + 2x = 360$

$12x = 360$
$x = \frac{360}{12} = 30$

$x =$ 30 ..... [2]

21 Solve $20 > 6 + 2x$.

$20 - 6 > 2x$
$\frac{14}{2} > \frac{2x}{2}$

$7 > x$

$x < 7$ ..... [2]

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

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

Find the value of k.

$2y = 6x - 5$

$y = 3x - 5/2$

$k =$ 3 [1]

23 Solve the simultaneous equations.

$$-5a + 2b = -28$$
$$6a - 2b = 36$$

$-5a + 2b = -28$

$+ 6a - 2b = 36$

$a = 8$

$6(8) - 2b = 36$

$-2b = 36 - 48$

$-2b = -12$

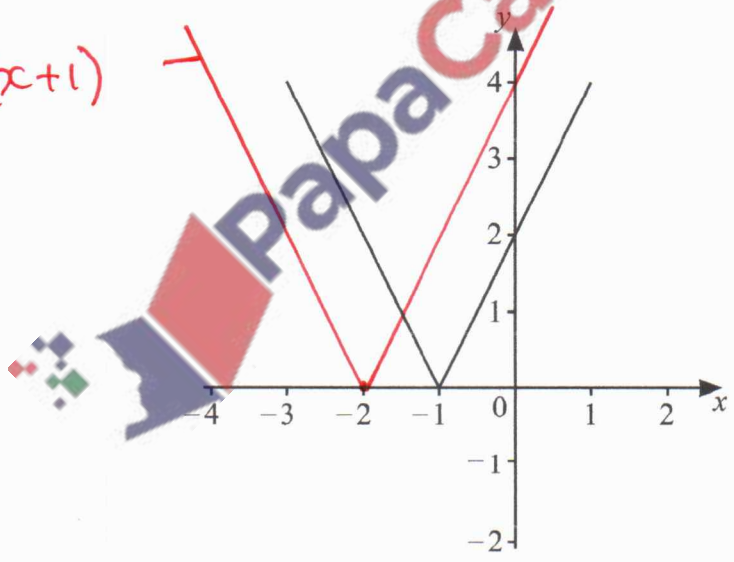
$b = 6$

$a =$ 8

$b =$ 6 [2]

24

$y = f(x+1)$



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

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