Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

7226715512

MATHEMATICS **0580/11**

Paper 1 (Core) **May/June 2021**

1 hour

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.
- You should use a calculator where appropriate.
- You may use tracing paper.
- You must show all necessary working clearly.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
- For π, use either your calculator value or 3.142.

INFORMATION

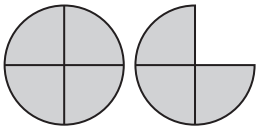
- The total mark for this paper is 56.
- The number of marks for each question or part question is shown in brackets [ ].

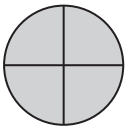
This document has **12** pages. Any blank pages are indicated.

1 Zachary asks the 30 students in his class which is their favourite sport.
The table shows the results.

Netball	Football	Hockey	Tennis
7	12	6	5

Complete the pictogram.

Netball	
Football	
Hockey	
Tennis	

Key:  represents 4 people

[2]

2 **(a)** Find the value of $\sqrt{225}$.

..... [1]

(b) Write down the reciprocal of $\frac{2}{3}$.

..... [1]

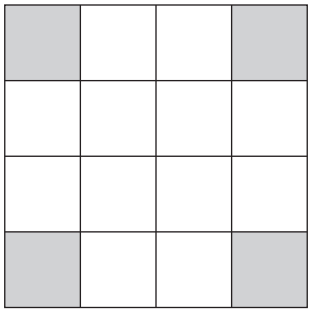
(c) Work out three-quarters of one-third.

..... [1]

(d) Work out $-7-(6-8)$.

..... [1]

3



(a) Write down the order of rotational symmetry of this diagram.

..... [1]

(b) On the diagram, draw all the lines of symmetry. [2]

4 The stem-and-leaf diagram shows the number of hours that each of 16 students studied last week.

1	2	5	6	8	
2	0	1	1	7	9
3	2	3	4	5	
4	4	5	7		

Key: 1|2 represents 12 hours

Find

(a) the median,

..... h [1]

(b) the mode,

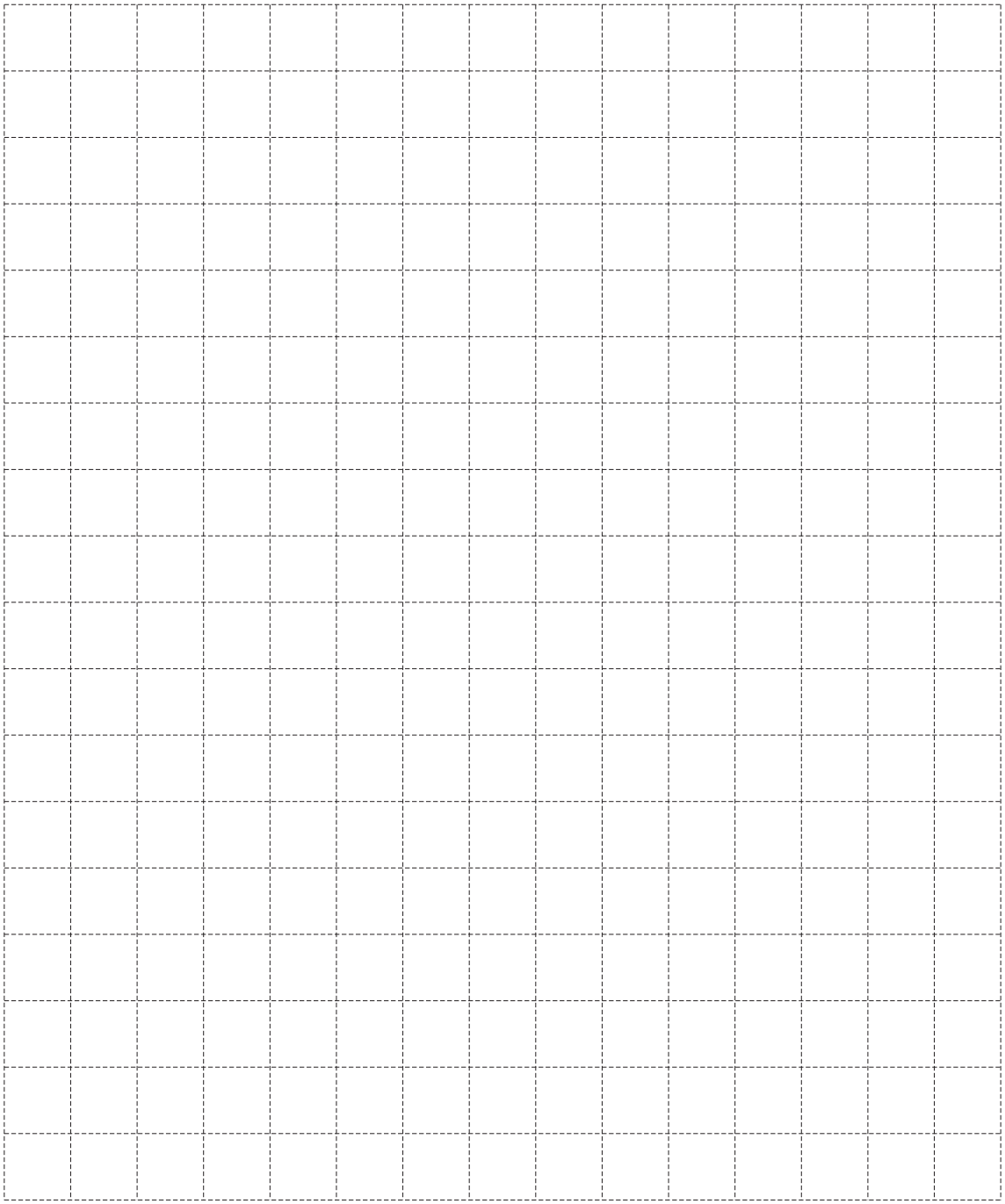
..... h [1]

(c) the range.

..... h [1]

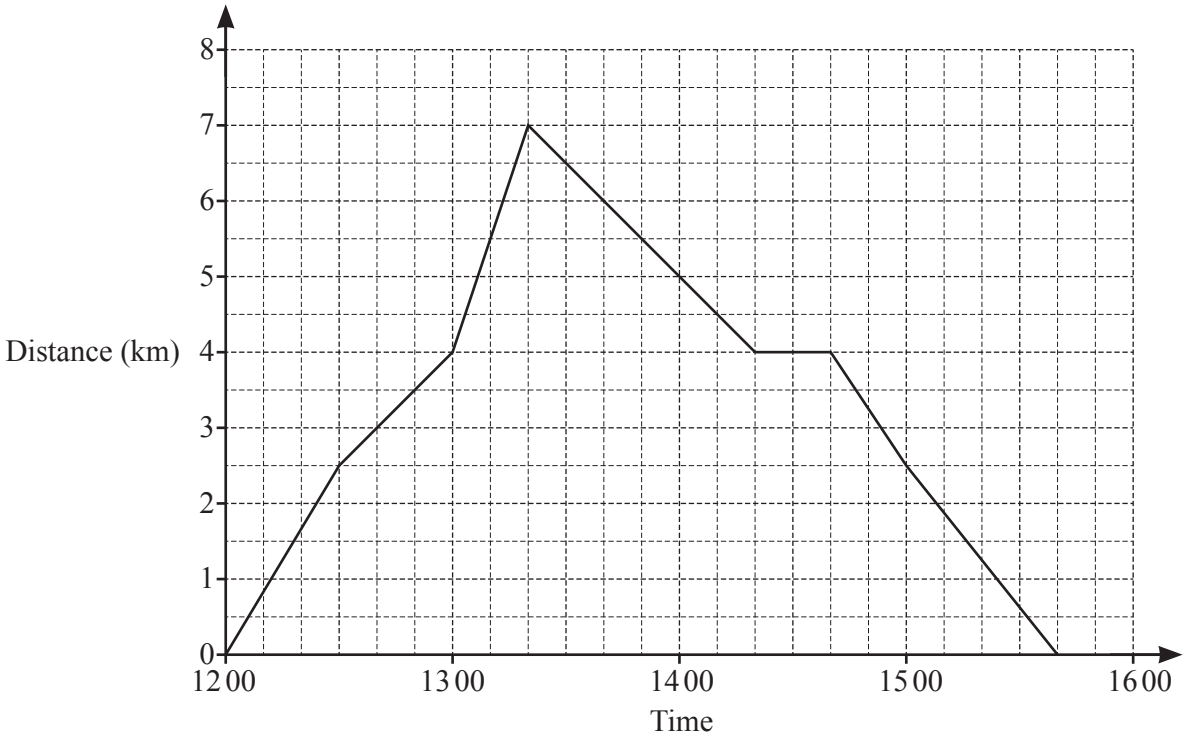
5 The volume of a cuboid is $24\,cm^3$.
The base of the cuboid is 3 cm by 2 cm.

Draw a net of the cuboid on the $1\,cm^2$ grid.



[4]

6



The travel graph shows a student's journey.

(a) Explain what is happening between 1420 and 1440.

..... [1]

(b) Complete the statement.

The student is travelling fastest between the times ..... and .....

because ..... [2]

7 The probability that a train is late is 0.15 .

Write down the probability that the train is not late.

..... [1]

8 Nazaneen changes \$6500 into 5798 euros at a bank.

Work out the exchange rate the bank uses.

\$1 = ... euros [1]

9 Work out.

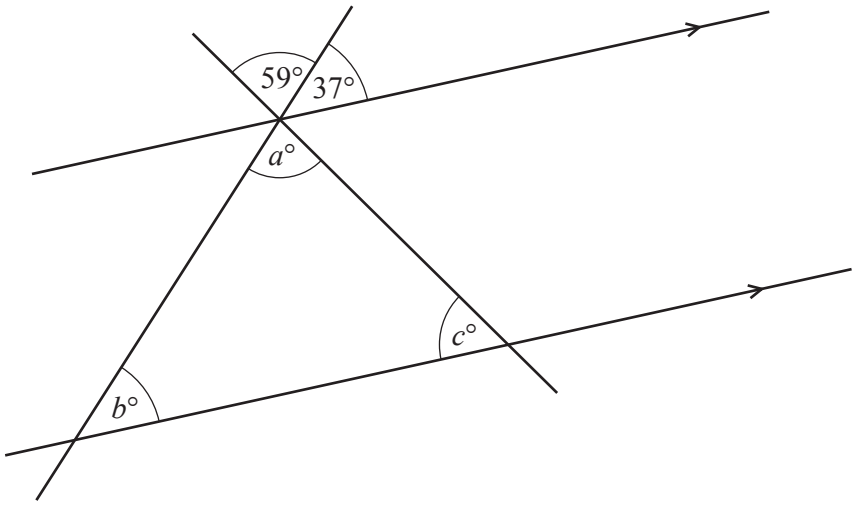
(a) $\begin{pmatrix} 6 \\ -5 \end{pmatrix} + \begin{pmatrix} 8 \\ -1 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $3\begin{pmatrix} -4 \\ 7 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

10



NOT TO SCALE

The diagram shows two parallel lines intersected by two straight lines.

Find the values of a, b and c.

a = ...

b = ...

c = ... [3]

11 **(a)** Write down the mathematical name for a polygon with 5 sides.

..... [1]

(b) Work out the interior angle of a regular 18-sided polygon.

..... [2]

12 The nth term of a sequence is $6n - 4$.

(a) Write down the first 3 terms in this sequence.

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

(b) The kth term of this sequence is 422.

Work out the value of k.

$k =$ ..... [2]

13 The radius of a circle is 42 cm.

Work out the circumference of the circle.
Give your answer in terms of π.

..... cm [2]

14 Change $680\,000\,\text{cm}^3$ into m^3.

..... m^3 [1]

15 The length, l metres, of a piece of rope is 5.67 m, correct to the nearest centimetre.

Complete this statement about the value of l.

..... $\leqslant l <$ ..... [2]

16 **Without using a calculator**, work out $1\frac{3}{8} - \frac{5}{6}$.
You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

17 **(a)** Write $\frac{1}{2\times2\times2\times2\times2}$ as a power of 2.

..... [1]

(b) **(i)** $3^{18} \div 3^{t} = 3^{6}$

Find the value of t.

$t =$ ..... [1]

(ii) Simplify.

$8w^{10} \times 6w^{5}$

..... [2]

18 Annie invests \$8300 at a rate of 5.6% per year compound interest.

Calculate the value of her investment at the end of 6 years.

\$ ..... [2]

19 Write down an irrational number, n, where $31 < n < 32$.

$n =$ ..... [1]

20 By rounding each number in the calculation correct to 1 significant figure, estimate the value of

$$\frac{38.7 \times 3.115}{20.3 - 4.1^2}.$$

You must show all your working.

..... [2]

21 Solve the simultaneous equations.
You must show all your working.

$$2x + y = 3$$
$$x - 5y = 40$$

$x =$ .....

$y =$ ..... [3]

22 There is a straight road between town *A* and town *B* of length 130 km.

Maxi travels from town *A* to town *B*.
Pippa travels from town *B* to town *A*.
Both travel at a constant speed of 40 km/h.
Maxi leaves 30 minutes before Pippa.

Work out how far from town *A* they will be when they pass each other.

..... km [4]

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