Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

9501503077

MATHEMATICS **0580/11**

Paper 1 (Core) **May/June 2022**

1 hour

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

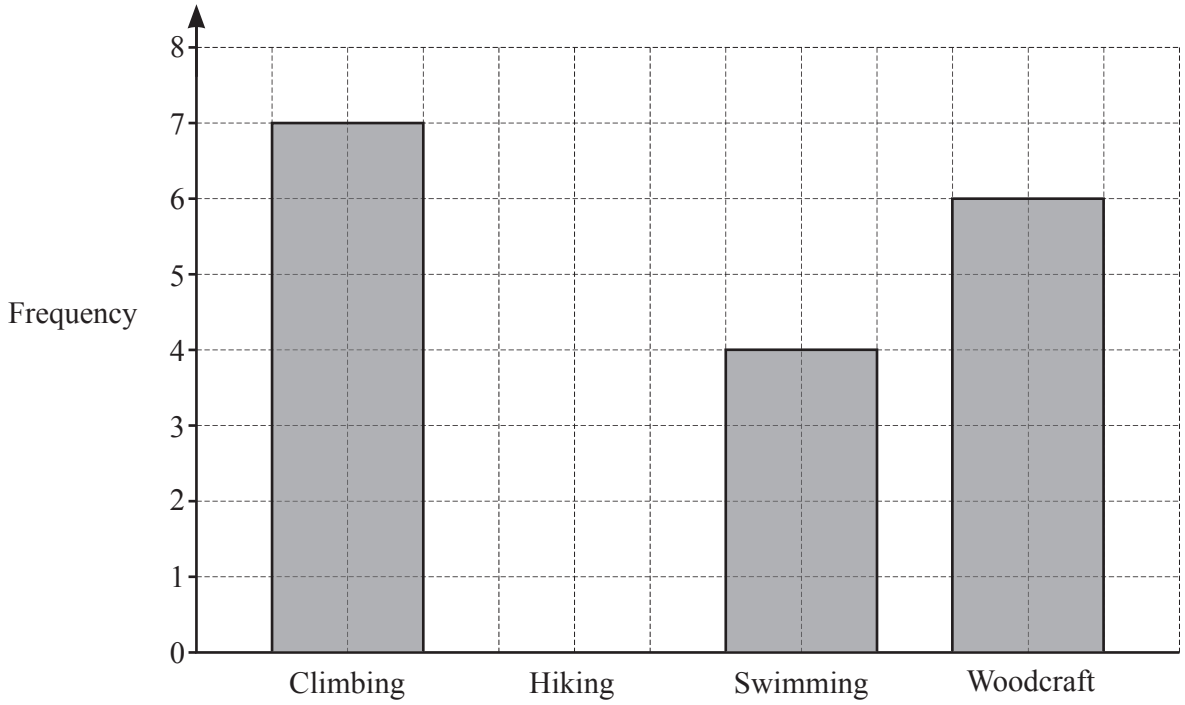
- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction 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.

1 Students at an activity centre choose one of four activities.
The bar chart shows some of their choices.



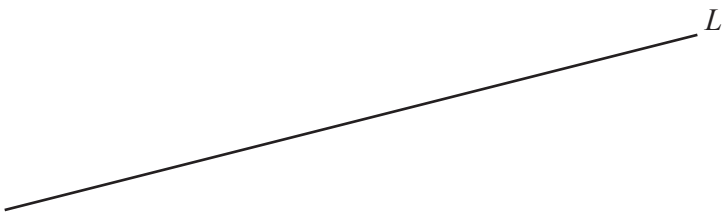
(a) 5 students choose hiking.

Complete the bar chart. [1]

(b) Write down the most popular activity.

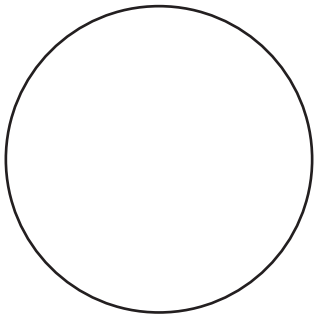
..... [1]

2



Draw a line that is perpendicular to line L. [1]

3 **(a)**



The diagram shows a circle.

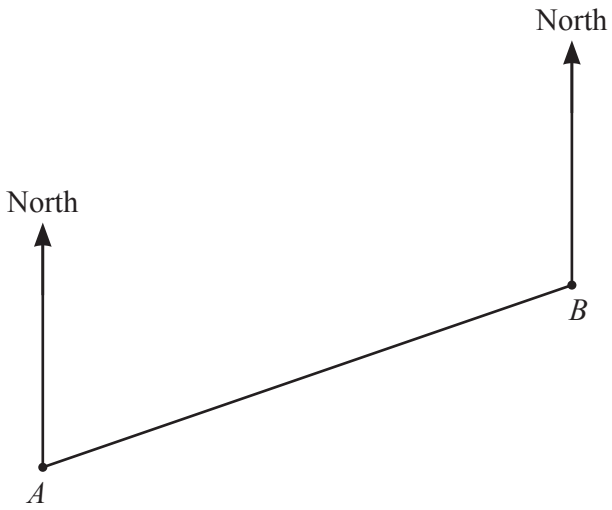
On the diagram, draw a chord. [1]

(b) Another circle has a diameter of 28 cm.

Find the radius of this circle.

..... cm [1]

4 The scale drawing shows the positions of town *A* and town *B*.
The scale is 1 cm represents 15 km.



Scale: 1 cm to 15 km

(a) Find the actual distance between town *A* and town *B*.

..... km [2]

(b) Measure the bearing of town *B* from town *A*.

..... [1]

5 Change 0.56 kilometres into metres.

..... m [1]

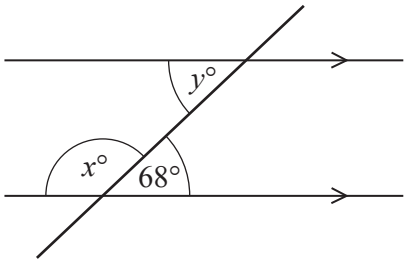
6 Write these numbers in order, starting with the smallest.

$\frac{6}{17}$ 34% $\frac{9}{25}$ 0.345

..... < ..... < ..... < ..... [2]

smallest

7



NOT TO SCALE

The diagram shows two parallel lines and a straight line crossing them.

Find the value of x and the value of y.

$x =$ .....

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

8 Here is some information about six numbers:

- The lowest number is 37.
- The range is 24.
- The mode is 43.
- The median is 46.
- One number is a multiple of 11.

Find the other five numbers.

37, ..., ..., ..., ..., ... [4]

9 Calculate $4^5 - 5^4$.

..... [1]

10 Jason starts a run at 10.05 am and finishes at 1.02 pm.

Work out the time Jason takes to complete the run.

..... h ..... min [1]

11 Calculate $\frac{1-0.7}{0.45-0.38}$, giving your answer correct to 4 significant figures.

..... [2]

12 Kirsty changes \$380.80 into pounds (£) when £1 = \$1.19.

Calculate the amount Kirsty receives.

£ ..... [2]

13 A 4-sided spinner is numbered 1, 2, 3 and 4.
The table shows the probability of the spinner landing on 1, 2 and 4.

Number	1	2	3	4
Probability	0.27	0.18		0.32

Complete the table.

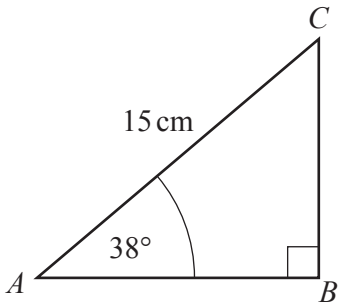
[2]

14 **Without using a calculator**, work out $\frac{3}{7}-\frac{2}{21}$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [2]

15



NOT TO SCALE

The diagram shows a right-angled triangle, ABC.
$AC = 15$ cm and angle $BAC = 38°$.

Calculate BC.

$BC =$ ..... cm [2]

16 $v = 3 - 5t$

(a) Work out the value of v when $t = 4$.

$v =$ ..... [1]

(b) Make t the subject of the formula.

$t =$ ..... [2]

17 Kim has a 6-sided spinner numbered 1 to 6.
She spins it 63 times and her scores are shown in the table.

Score on spinner	1	2	3	4	5	6
Frequency	12	7	15	11	8	10

(a) Find the relative frequency of scoring a 5 with this spinner.

..... [1]

(b) Work out the mean score.

..... [3]

18 Factorise completely.

$$14xy - 7y^2$$

..... [2]

19 Lin invests \$16 000 at a rate of r% per year simple interest.
At the end of 5 years, she has a total amount of \$17 920.

Find the value of r.

$r =$ ..... [3]

20 22, 17, 12, 7, 2, …

(a) Find the next term of the sequence.

..... [1]

(b) Find the nth term of the sequence.

..... [2]

21 Write down an irrational number with a value between 10 and 20.

..... [1]

22 The table shows the population and area of three countries in 2020.

Country	Population	Area (km^2)
Nigeria	2.06×10^8	9.11×10^5
Comoros	8.70×10^5	1.86×10^3
Vietnam	9.73×10^7	3.10×10^5

(a) Calculate the difference in population between Nigeria and Vietnam.

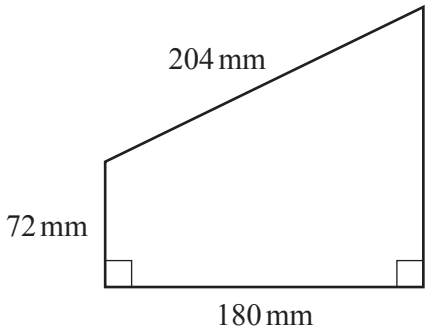
..... [1]

(b) Which of Comoros or Vietnam has the greater population density?
You must show all your working.

$$\left[\text{Population density} = \frac{\text{population}}{\text{area}\,(\text{km}^2)}\right]$$

..... [3]

23



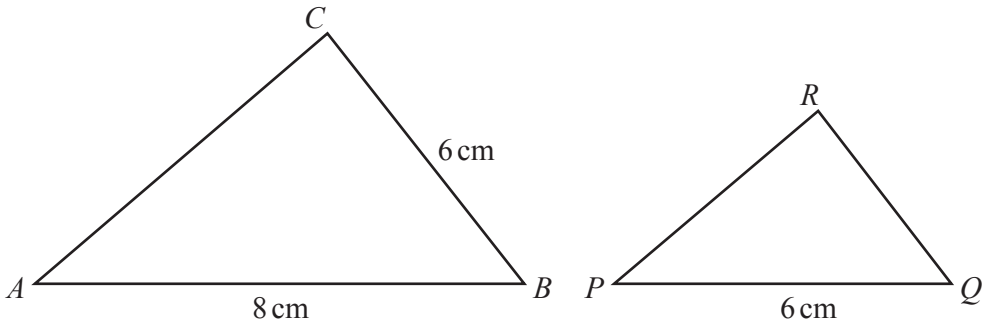
NOT TO SCALE

Work out the area of this trapezium.

..... mm^2 [5]

Question 24 is printed on the next page.

24



NOT TO SCALE

Triangle ABC is mathematically similar to triangle PQR.

Calculate QR.

$QR =$ ..... cm [2]