Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

MATHEMATICS **0580/11**

Paper 1 (Core) **October/November 2020**

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. Blank pages are indicated.

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1 Write down the mathematical name for

(a) an angle which is less than 90°,

..... [1]

(b) a polygon with 5 sides,

..... [1]

(c) a quadrilateral with exactly one pair of parallel sides.

..... [1]

2

hexagon perpendicular isosceles
regular congruent

Put a ring around the word that describes two polygons that are the same shape and size. [1]

3 Write $\frac{60}{105}$ in its simplest form.

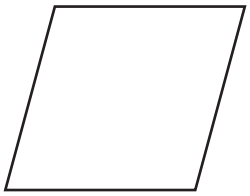
..... [1]

4 Calculate.

$$\sqrt{\frac{1}{0.01} - 8^2}$$

..... [1]

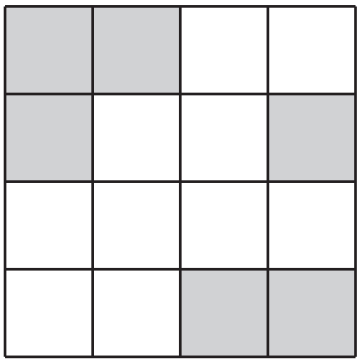
5 **(a)**



The diagram shows a rhombus.

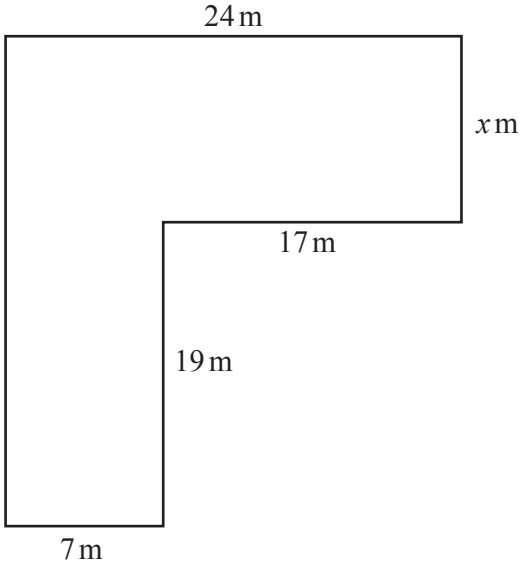
On the diagram, draw all the lines of symmetry. [2]

(b)



Shade two squares so that the diagram has rotational symmetry of order 2. [1]

6



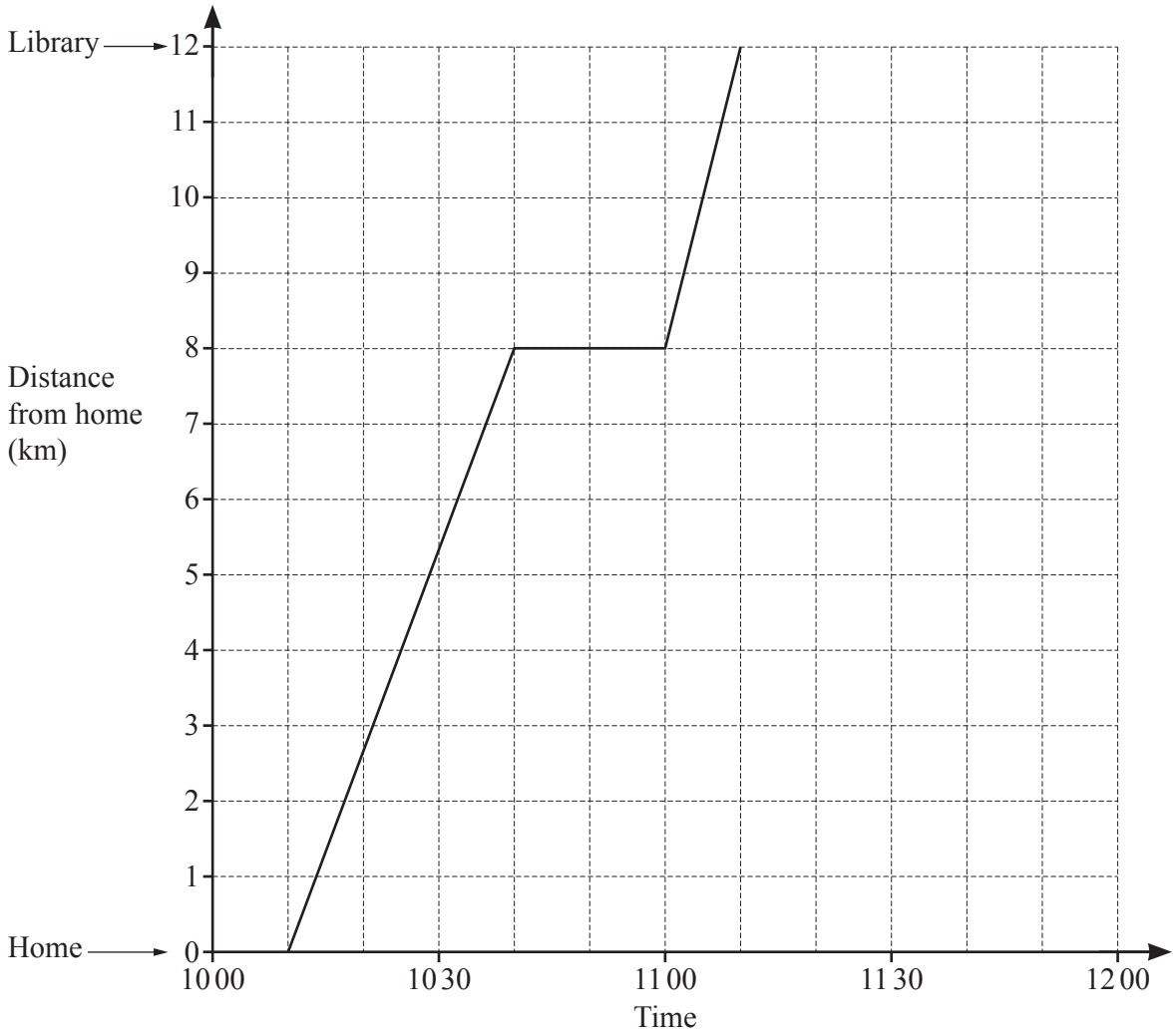
NOT TO SCALE

The diagram shows a shape made from rectangles.
The shape has a total area of $517\,\text{m}^2$.

Find the value of x.

$x =$ ..... [4]

7 Hua cycles from her home to the library.
The travel graph shows this journey.



(a) At what time does she start her journey?

..... [1]

(b) **(i)** Find her distance from home when she stops for a rest.

..... km [1]

(ii) How long does she stop for a rest?

..... min [1]

(c) Hua stays at the library for 10 minutes.
She then cycles home at a constant speed of 24 km/h.

Complete the travel graph. [2]

8 A field, ABC, is in the shape of a triangle.
$AC = 500\,\text{m}$ and $BC = 650\,\text{m}$.

Using a ruler and compasses only, complete the scale drawing of the field ABC.
Leave in your construction arcs.
Use a scale of 1 cm to represent 100 m.
The side AB has been drawn for you.

Scale: 1 cm to 100 m

[3]

9 Alan and Beth share \$1190 in the ratio Alan : Beth = 5 : 2.

Work out how much Alan receives.

\$ ..... [2]

10 Work out.

(a) $\begin{pmatrix} 2 \\ -3 \end{pmatrix} + \begin{pmatrix} 5 \\ -1 \end{pmatrix}$

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

(b) $4\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

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

11 Rangan buys 3.6 kg of potatoes and 2.8 kg of leeks.
The total cost is \$13.72 .
Leeks cost \$2.65 per kilogram.

Find the cost of 1 kg of potatoes.

\$ ..... [3]

12 $$T = \frac{49.2 - 9.59}{4.085 \times 2.35}$$

By writing each number correct to 1 significant figure, work out an estimate for T.
You must show all your working.

..... [2]

13 **(a)** Write 18 as the product of its prime factors.

..... [2]

(b) At a bus stop

- a red bus arrives every 18 minutes

and

- a blue bus arrives every 24 minutes.

At 1047 a red bus and a blue bus arrive.

Find the next time when a red bus and a blue bus arrive together.

..... [3]

14 **Without using a calculator**, work out $2\frac{2}{3} \times 2\frac{3}{4}$.
You must show all your working and give your answer as a mixed number in its simplest form.

..... [3]

15 Change 4.37 litres into cubic centimetres.

..... cm^3 [1]

16 Make x the subject of this formula.

$$2y = 5x - 7$$

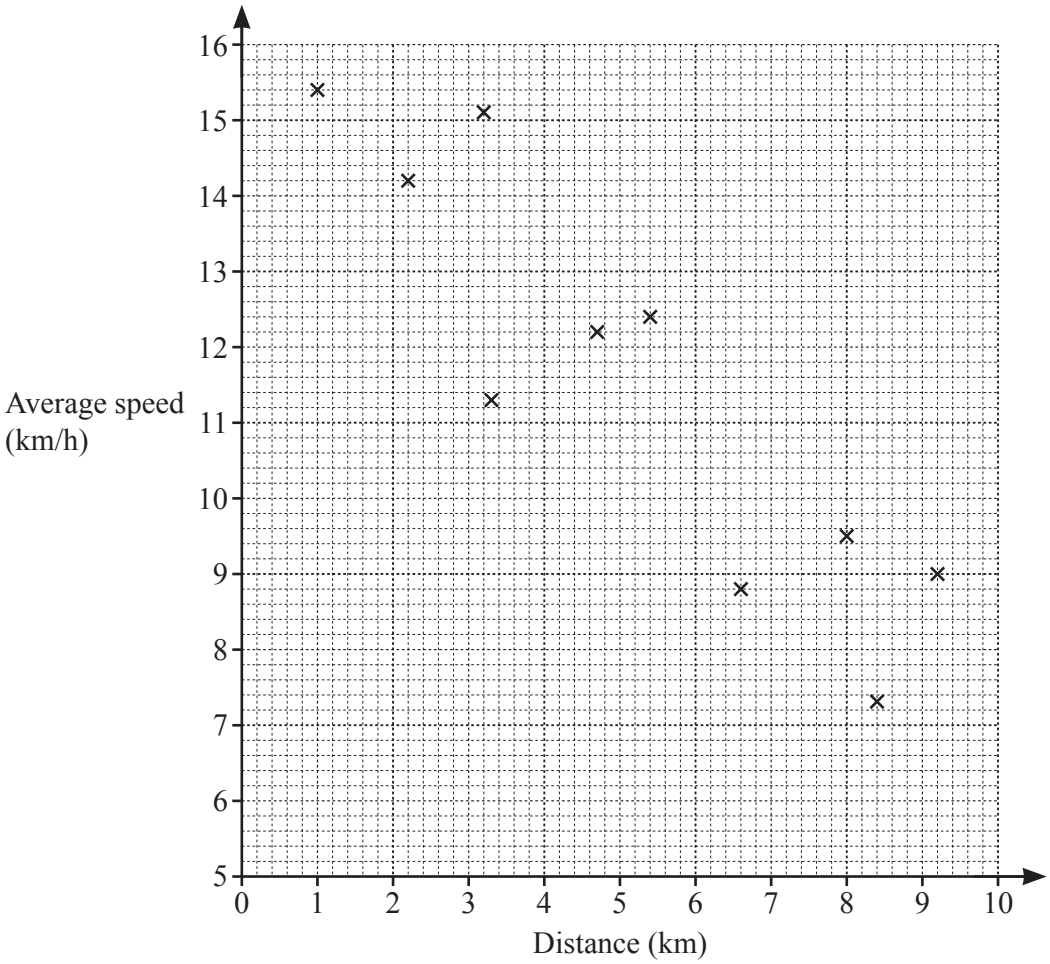
$x =$ ..... [2]

17 Trina invests \$16 000 at a rate of 5% per year compound interest.

Work out the value of her investment at the end of 4 years.

\$ ..... [2]

18 Aisha records the distance she runs and her average speed.
The results are shown in the scatter diagram.



(a) The table shows the results of four more runs.

Distance (km)	4.2	5.7	7.1	8.8
Average speed (km/h)	13.4	11.8	9.8	8.3

On the scatter diagram, plot these points. [2]

(b) What type of correlation is shown in the scatter diagram?

..... [1]

(c) On the scatter diagram, draw a line of best fit. [1]

(d) Use your line of best fit to estimate her average speed when she runs a distance of 6 km.

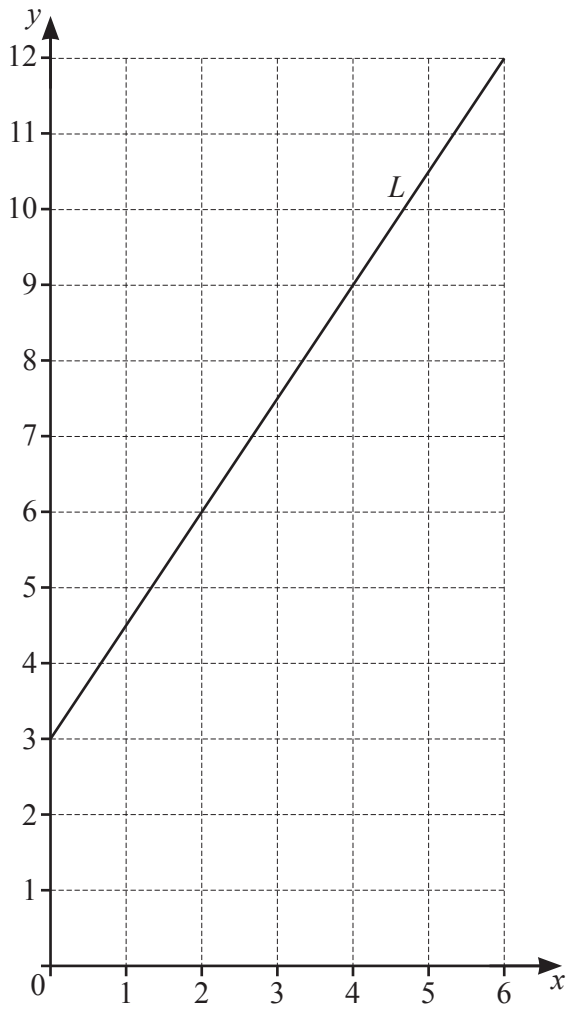
..... km/h [1]

19 A circle has a circumference of 56 mm.

Work out the radius of this circle.

..... mm [2]

20

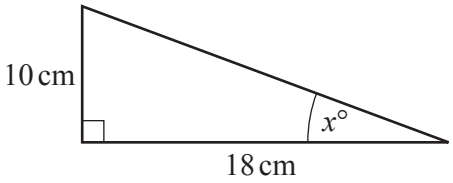


Find the equation of line L in the form $y = mx + c$.

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

Question 21 is printed on the next page.

21 **(a)**



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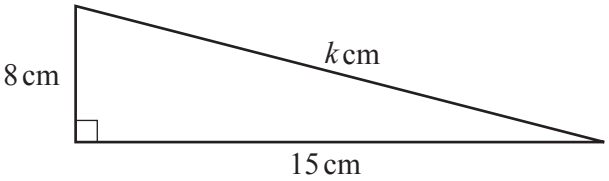
Calculate the value of x.

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

(b)



NOT TO SCALE

Calculate the value of k.

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