Cambridge Assessment International Education

# Cambridge IGCSE™

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*0995770357*

**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 $\pi$, 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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**[Turn over**

**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]

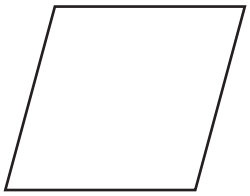
**4** Calculate.

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

..... [1]

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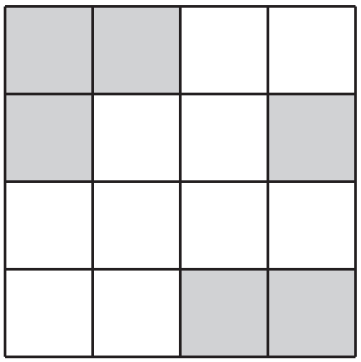
**5 (a)**



The diagram shows a rhombus.

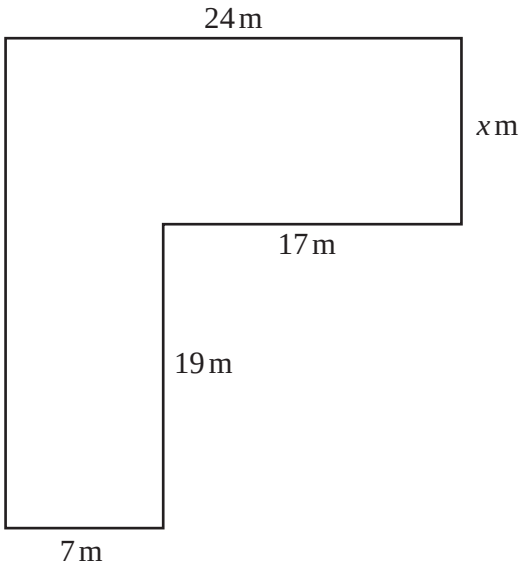
On the diagram, draw all the lines of symmetry. [2]

**(b)**



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

**6**



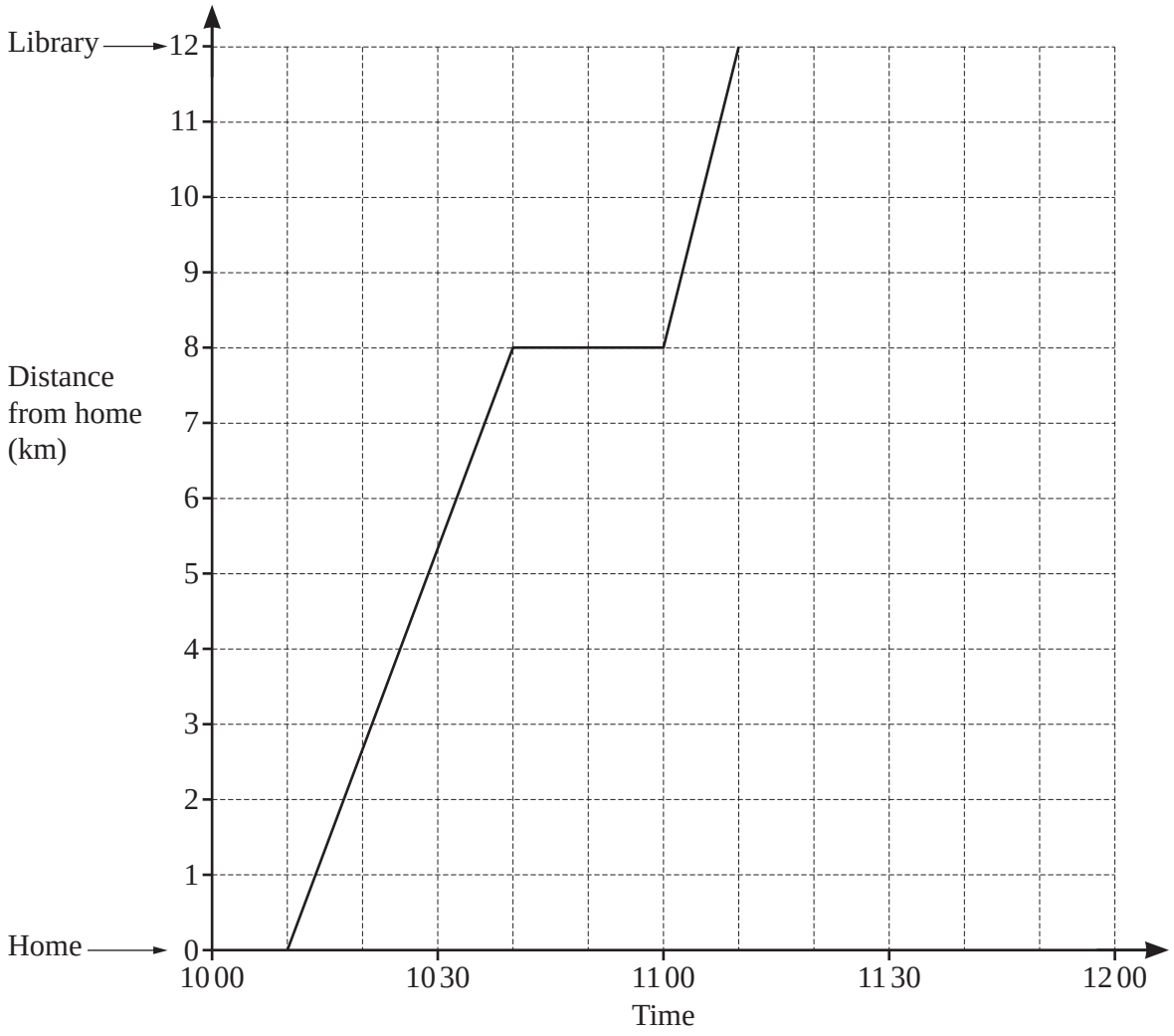

NOT TO SCALE

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

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 m and *BC* = 650 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]

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**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** $T = \dfrac{49.2 - 9.59}{4.085 \times 2.35}$

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 10 47 a red bus and a blue bus arrive.

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

..... [3]

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**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.

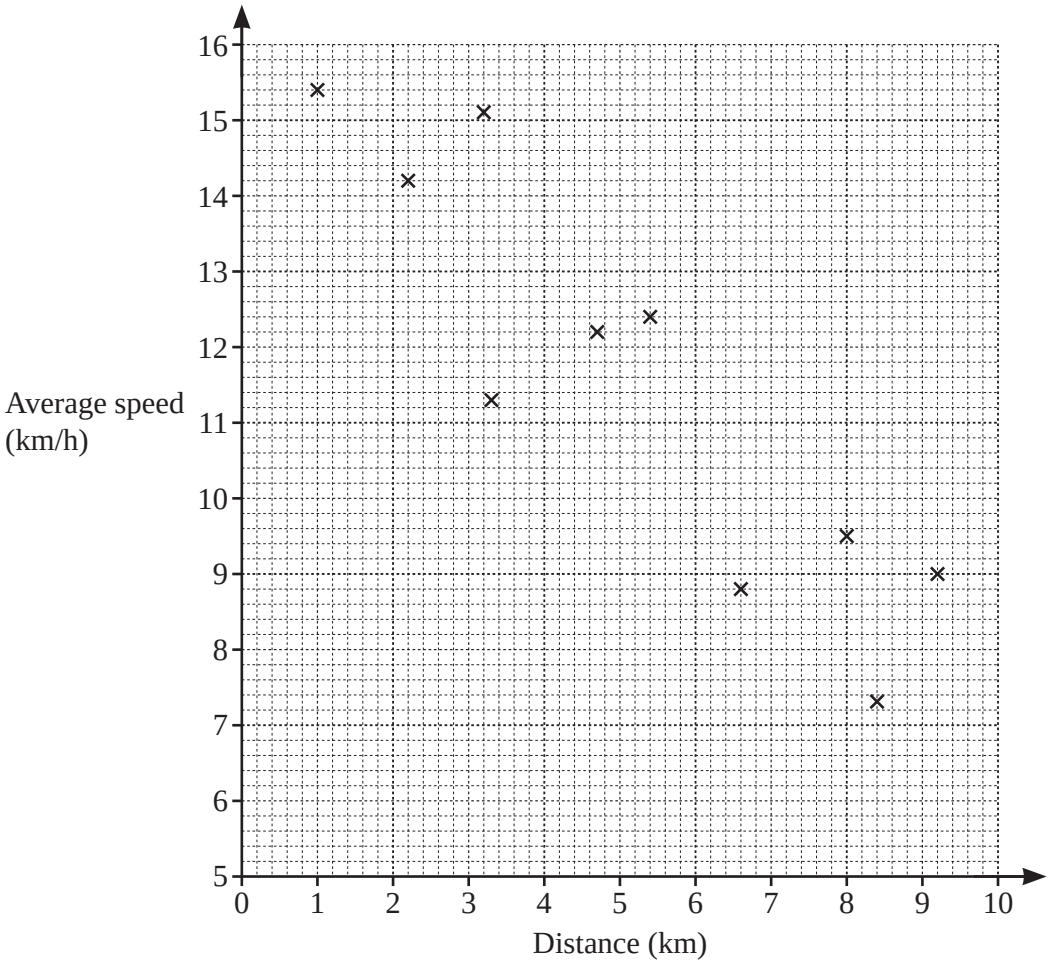
Work out the value of her investment at the end of 4 years.

\$ ..... [2]

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**[Turn over**

**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]

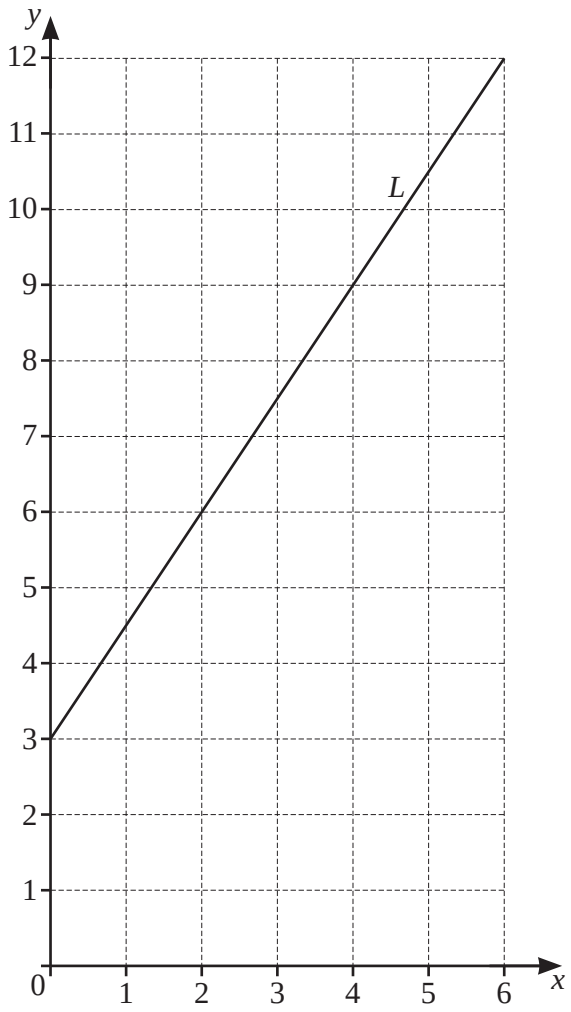
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**19** A circle has a circumference of 56 mm.

Work out the radius of this circle.

..... mm [2]

**20**

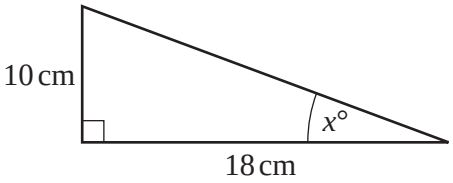



Find the equation of line $L$ in the form $y = mx + c$.

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

**Question 21 is printed on the next page.**

**21 (a)**

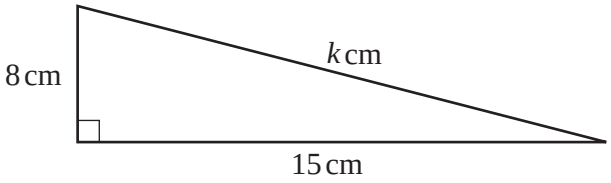



NOT TO SCALE

Calculate the value of $x$.

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

**(b)**




NOT TO SCALE

Calculate the value of $k$.

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

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