



# Cambridge IGCSE™ (9–1)

CANDIDATE  
NAME

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CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**MATHEMATICS**

**0980/11**

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.

1 Write down the mathematical name for

(a) an angle which is less than  $90^\circ$ ,

..... [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.

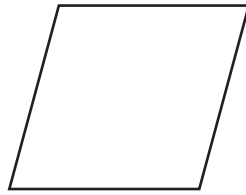
..... [1]

4 Calculate.

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

..... [1]

5 (a)

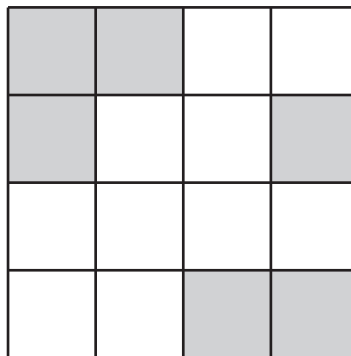


The diagram shows a rhombus.

On the diagram, draw all the lines of symmetry.

[2]

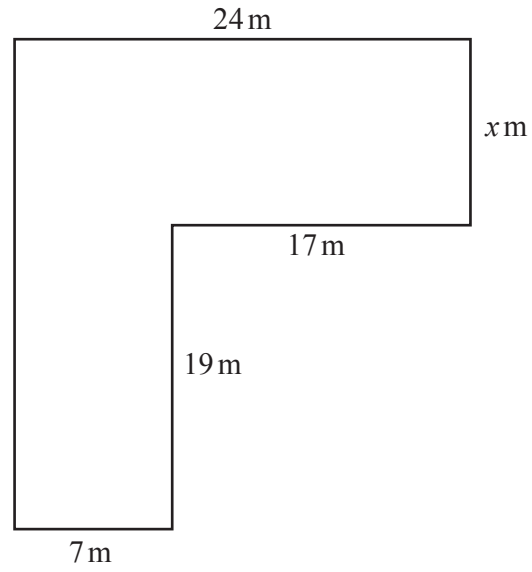
(b)



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

[1]

6

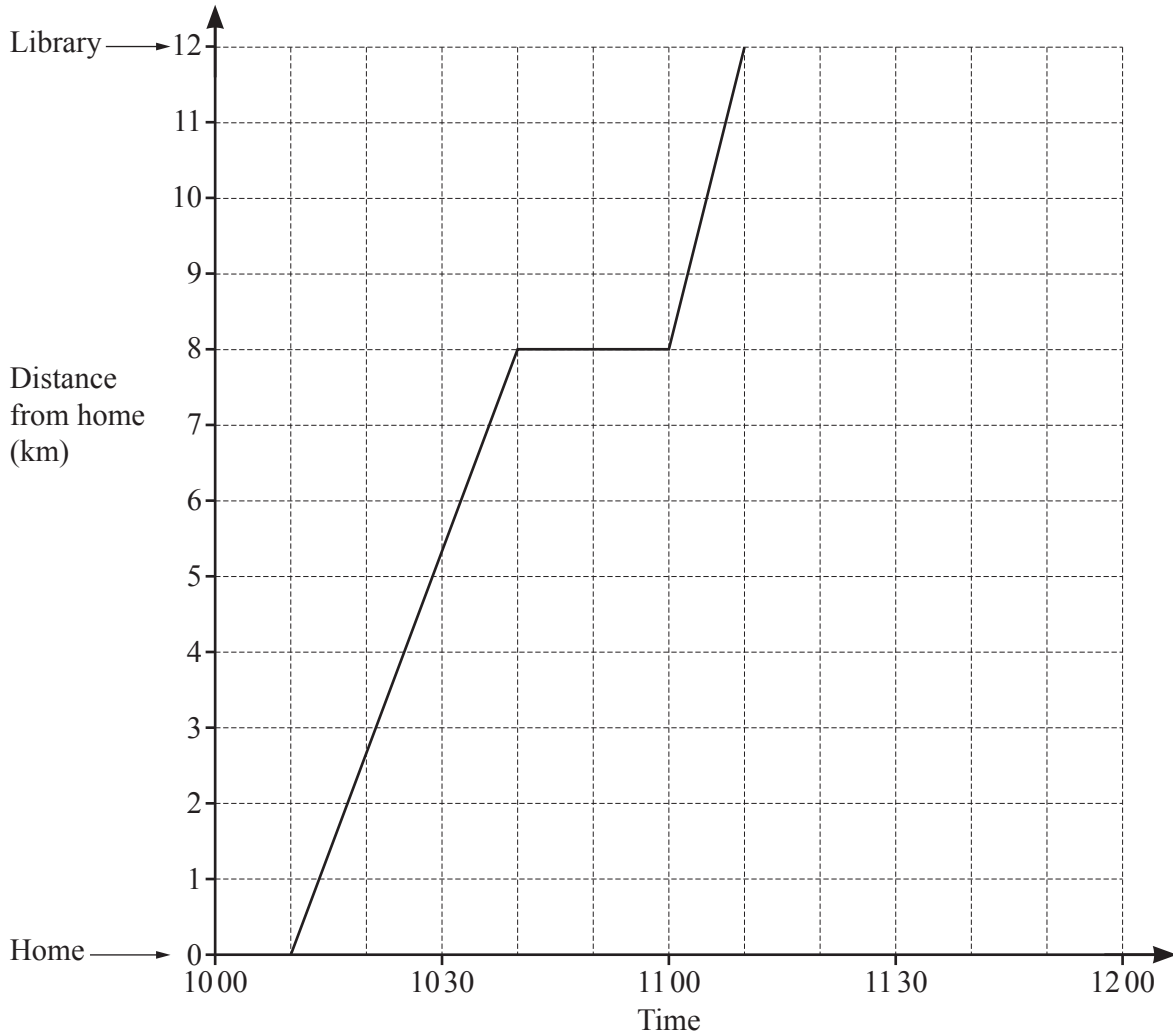
NOT TO  
SCALE

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

Find the value of  $x$ .

$$x = \dots\dots\dots [4]$$

- 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]

10 Work out.

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

$$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} [1]$$

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

$$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} [1]$$

- 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.

.....  $\text{cm}^3$  [1]

- 16 Make  $x$  the subject of this formula.

$$2y = 5x - 7$$

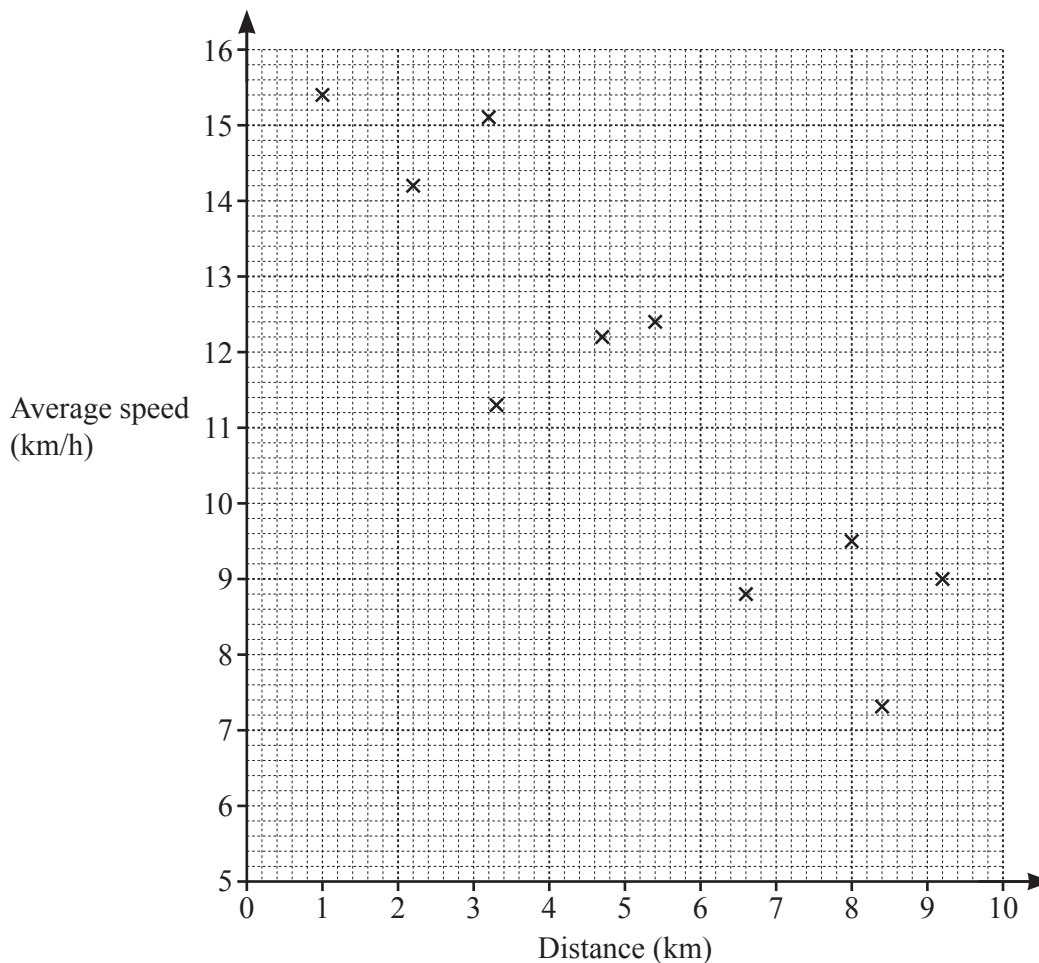
$x =$  ..... [2]

- 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.

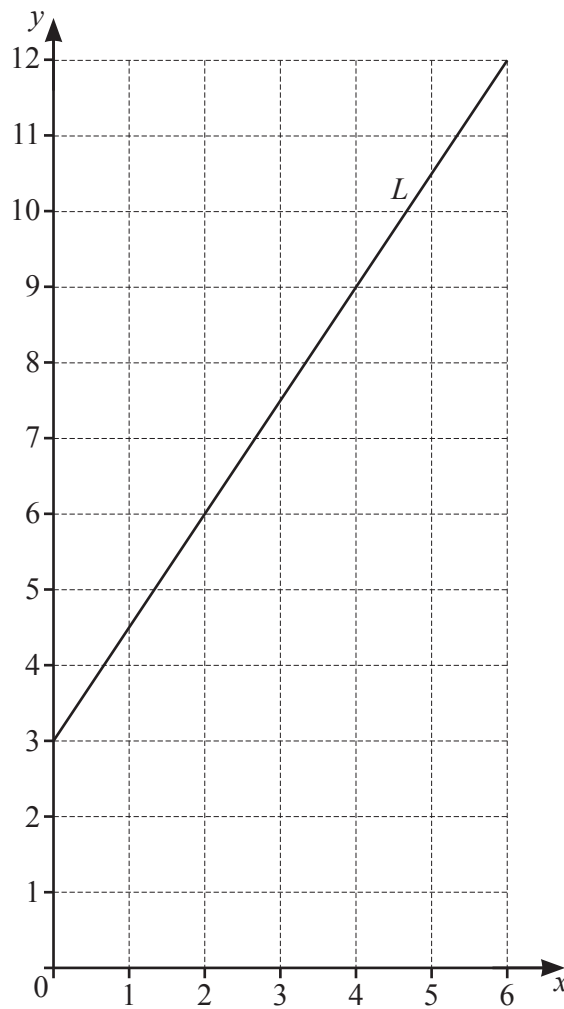
..... km/h [1]

19 A circle has a circumference of 56 mm.

Work out the radius of this circle.

..... mm [2]

20

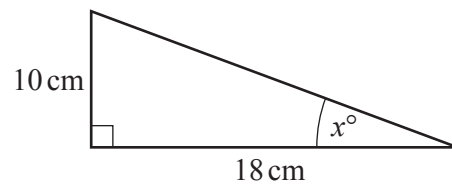


Find the equation of line  $L$  in the form  $y = mx + c$ .

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

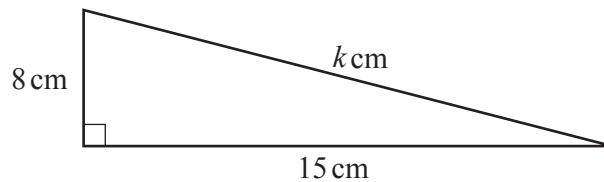
**Question 21 is printed on the next page.**

21 (a)

NOT TO  
SCALECalculate the value of  $x$ .

$$x = \dots\dots\dots [2]$$

(b)

NOT TO  
SCALECalculate the value of  $k$ .

$$k = \dots\dots\dots [2]$$

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