Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

2730724320

MATHEMATICS **0580/32**

Paper 3 (Core) **October/November 2018**

2 hours

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator
Tracing paper (optional)
Geometrical instruments

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
If working is needed for any question it must be shown below that question.
Electronic calculators should be used.
If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.
For π, use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 104.

This document consists of **15** printed pages and **1** blank page.

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CAMBRIDGE International Examinations

1 Three people pick strawberries.
The strawberries are sold in boxes.

(a) (i) On Wednesday, they pick a total of 89 kg of strawberries.
The mean mass of each strawberry is 22 g.

Work out the number of strawberries they picked.
Give your answer correct to the nearest 10.

..... [3]

(ii) On Thursday, they pick a total of 4650 strawberries.
They fill each box with 35 strawberries.

How many boxes do they fill?

..... [2]

(b) On Saturday, they sell 208 boxes of strawberries at $3.25 for each box.

Work out how much money they receive.

$ ..... [1]

(c) On Monday, they receive $390 for their boxes of strawberries.
They share this money in the ratio Alison : Bob : Jenny = 7 : 3 : 2.

Work out how much money they each receive.

Alison $ .....

Bob $ .....

Jenny $ ..... [3]

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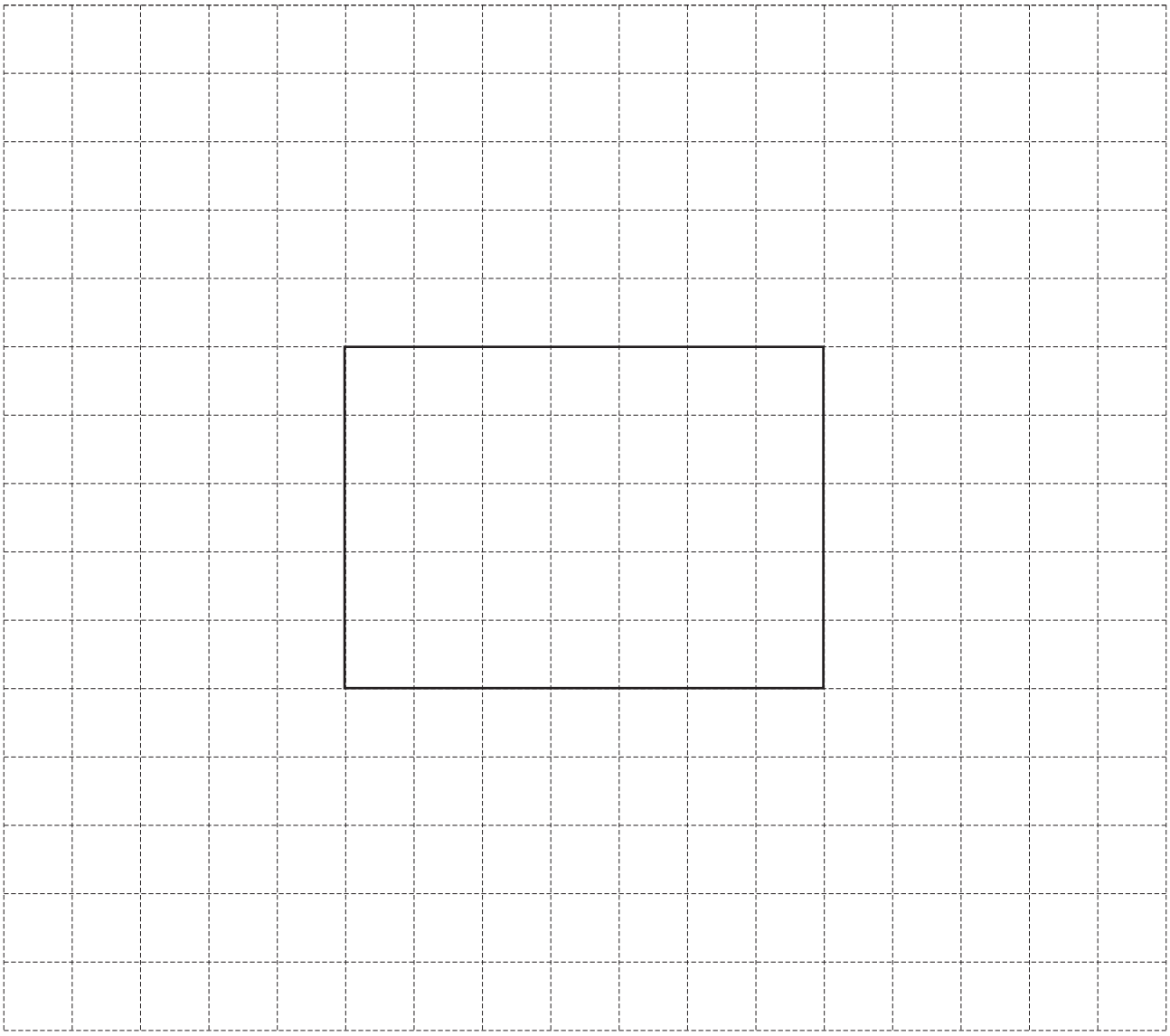
(d) In 2016, they picked a total of 3500 kg of strawberries.
In 2017, they picked a total of 3080 kg of strawberries.

Work out the percentage decrease in the mass of strawberries they picked from 2016 to 2017.

.....% [3]

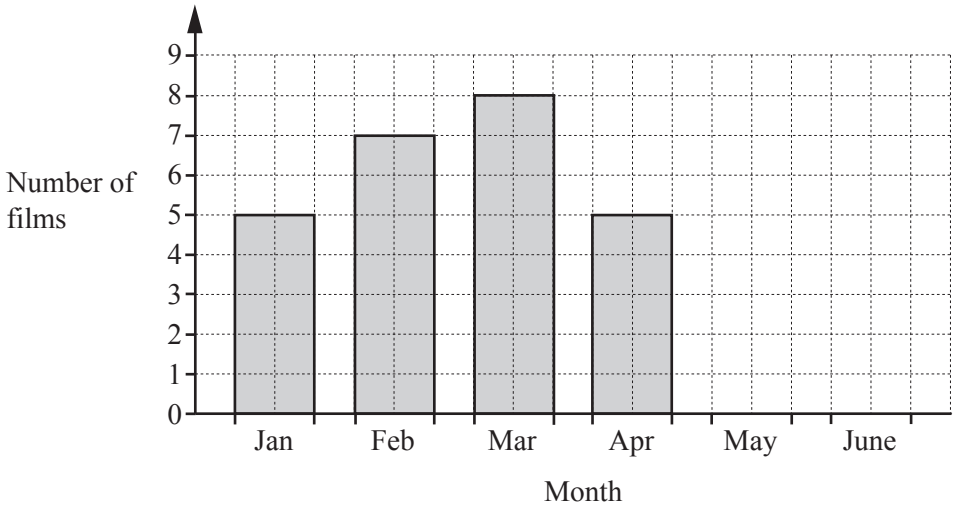
(e) An open box in the shape of a cuboid is 7 cm long, 5 cm wide and 4 cm high.

Complete the net of the box.
The base of the box has been drawn for you.



[2]

2 **(a)** The bar chart shows the number of different films shown at a cinema in each of four months.



(i) In May, 6 films were shown and in June, 4 films were shown.

Complete the bar chart. [1]

(ii) How many more films were shown in March than were shown in January?

..... [1]

(b) The cinema is open from 13 30 to 23 15 every day.

Work out how long the cinema is open in one week.
Give your answer in hours and minutes.

..... h ..... min [3]

(c) One Monday afternoon, the cinema sells 24 adult tickets, 16 child tickets and 8 senior tickets.

Work out the total amount of money received for these tickets.

Ticket prices	
Adult	$10.50
Child	$ 6.25
Senior	$ 9.00

$ ..... [3]

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(d) One Tuesday, there are 24 children out of the 80 people in the cinema.

Find the percentage of these people that are children.

.....% [1]

(e) **(i)** A film lasts for 85 minutes.
It starts at 1940.

Find the time when the film ends.

..... [1]

(ii) Another film lasts for 2 hours 45 minutes.
It finishes 10 minutes before the closing time of 2315.

Find the time that it starts.

..... [2]

(f) In the cinema café, Harry buys a cup of tea for $1.85 and a cake for $1.70 .

Work out the change he receives from a $5 note.

$ ..... [2]

(g) In the café, the fridge has a temperature of 4 °C and the freezer has a temperature of −17 °C.

(i) Work out the difference in these temperatures.

.....°C [1]

(ii) The temperature in the freezer rises by 3 °C.

Work out the new temperature in the freezer.

.....°C [1]

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[Turn over

3 **(a)** Simplify.

(i) $16c - 5d - 4c + 4d$

..... [2]

(ii) $4x^3 \times 2x^7$

..... [2]

(b) Solve.

$3x - 2 = 5x + 1$

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

(c) Factorise completely.

$3x^2y - 5xy$

..... [2]

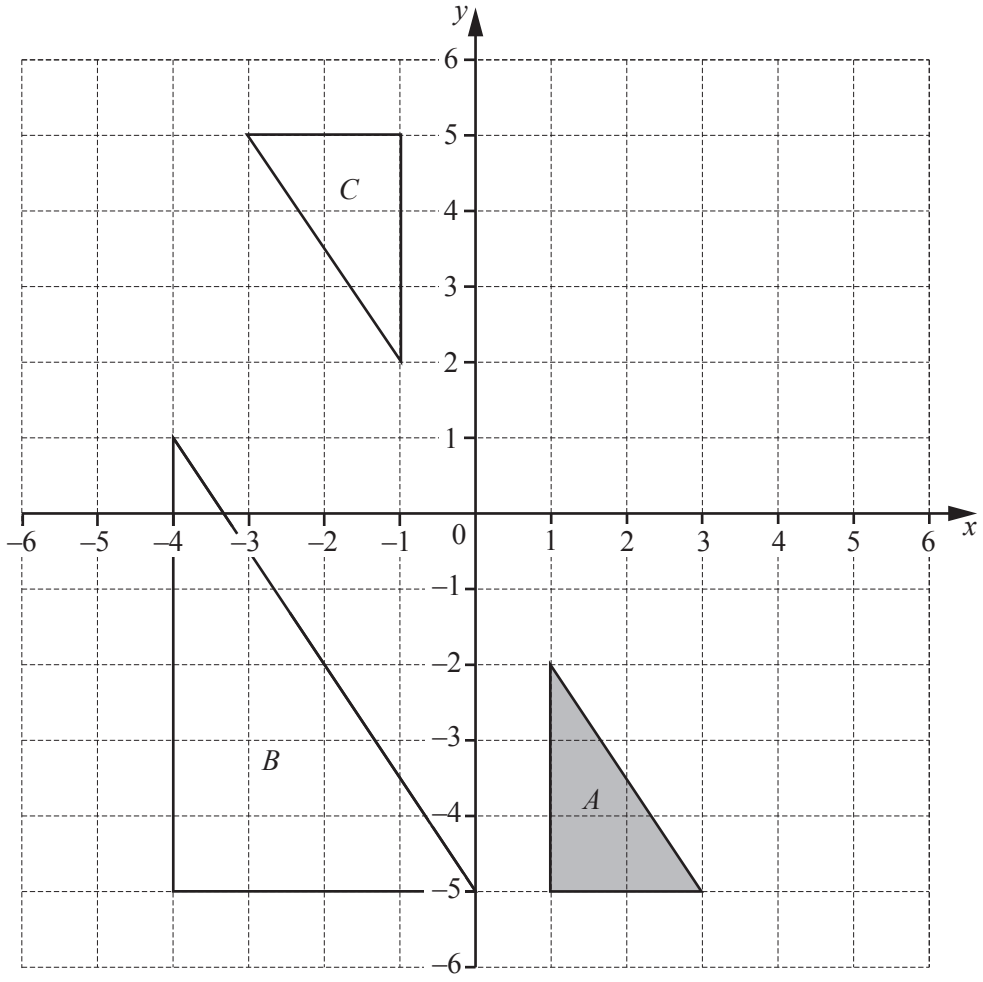
(d) Make r the subject of the formula.

$T = 3(r + 5)$

$r =$ ..... [2]

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4 Triangles A, B and C are shown on the grid.



(a) Describe fully the **single** transformation that maps triangle A onto triangle B.

.....

..... [3]

(b) Describe fully the **single** transformation that maps triangle A onto triangle C.

.....

..... [3]

(c) Translate triangle A by the vector $\begin{pmatrix} 2 \\ 5 \end{pmatrix}$. [2]

(d) Reflect triangle A in the line $x = 3$. [2]

5 **(a)** Draw all the lines of symmetry on the rectangle below.

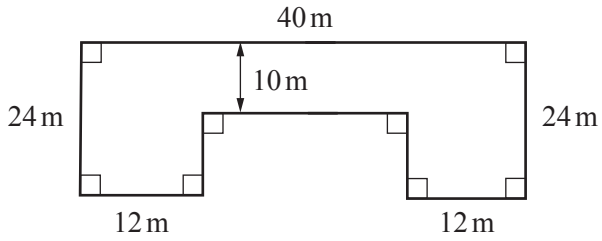


[2]

(b) Work out the size of one interior angle of a regular hexagon.

..... [3]

(c) The diagram shows a plan of a garden.

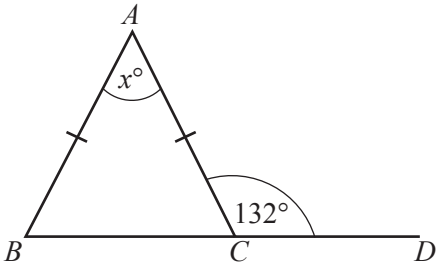


NOT TO SCALE

Work out the area of the garden.

..... m^2 [3]

(d)



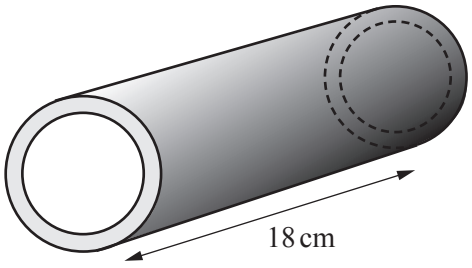
NOT TO SCALE

The diagram shows an isosceles triangle, *ABC*.
BCD is a straight line.

Find the value of x.

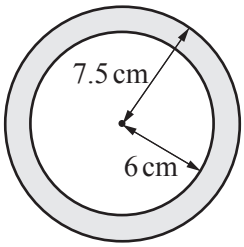
$x =$ ..... [2]

(e) The diagram shows a hollow metal pipe in the shape of a cylinder.



NOT TO SCALE

(i) This diagram shows the cross-section of the pipe.



NOT TO SCALE

Work out the shaded area.

.....cm^2 [3]

(ii) The cylinder is 18 cm long.

Work out the volume of the metal.

.....cm^3 [1]

(iii) Work out the curved surface area of the outside of the pipe.

.....cm^2 [3]

6 **(a)** 70 people each attempt a driving test.
Each person repeats the test until they pass.
The results are shown in the table.

Number of attempts	Number of people
1	19
2	17
3	8
4	12
5	9
6	5

(i) Write down the mode.

..... [1]

(ii) Calculate the mean.

..... [3]

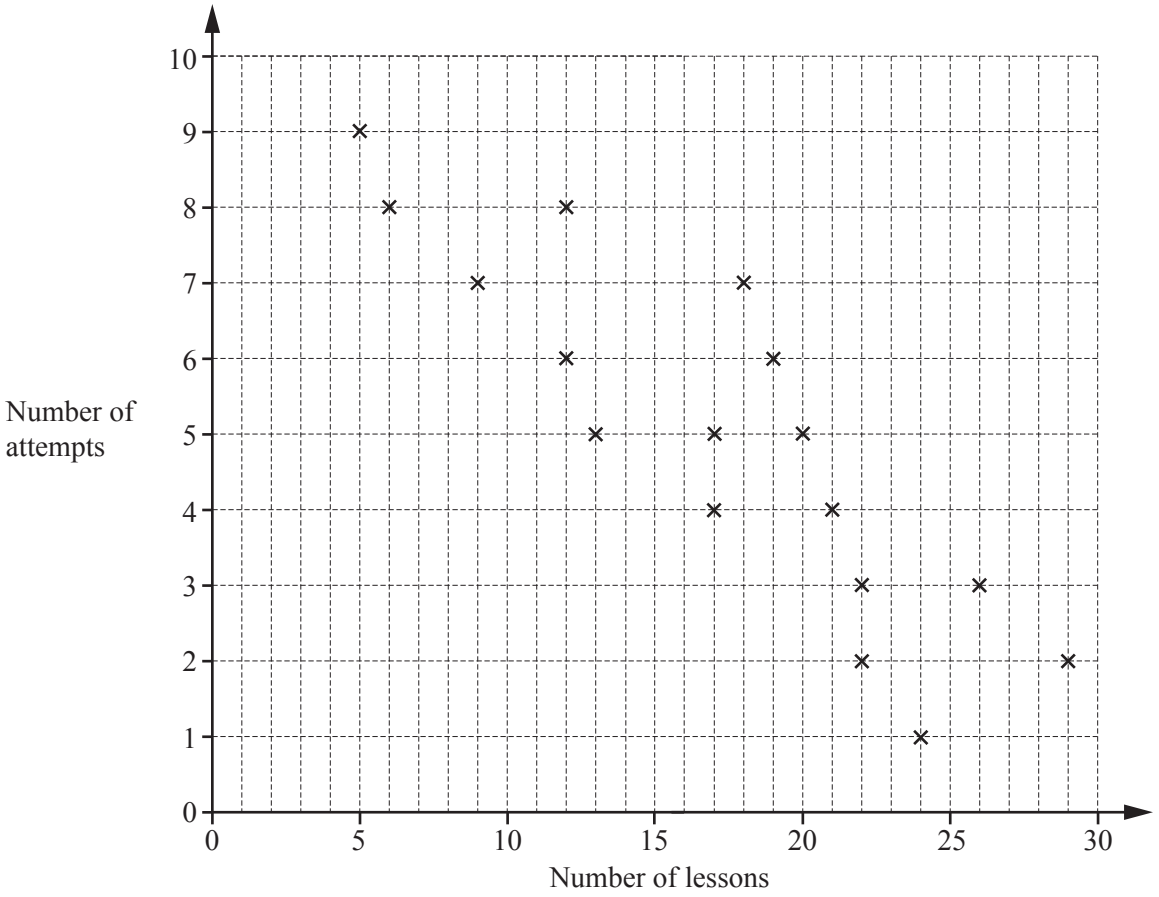
(iii) Jules says that the median is 3.5 .

Show that he is wrong.

.....

..... [1]

(b) The number of attempts at a driving test and the number of driving lessons for each of 17 people are shown in the scatter diagram.



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

..... [1]

(ii) One of these people is picked at random.

Work out the probability that this person had 5 or more attempts.

..... [1]

(iii) Draw a line of best fit on the scatter diagram. [1]

(iv) Another person had 15 lessons.

Estimate their number of attempts.

..... [1]

7 **(a)** Write in figures the number eight million and twenty three thousand.

..... [1]

(b) Write these in order of size, starting with the smallest.

$\frac{3}{7}$ 42% 0.45 $\frac{7}{17}$

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

(c) $\sqrt{64}$ 2.9 $\frac{25}{13}$ $\sqrt{97}$ 39 47 4.6^3 111 1.5×10^6

Write down a number from this list that is

(i) prime,

..... [1]

(ii) a multiple of 13,

..... [1]

(iii) irrational.

..... [1]

(d) The number, n, is given as 5300, correct to 2 significant figures.

Complete this statement about the value of n.

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

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(e) **Without using a calculator**, work out $1\frac{3}{4} \times 1\frac{2}{7}$.

Show all your working and give your answer as a mixed number in its simplest form.

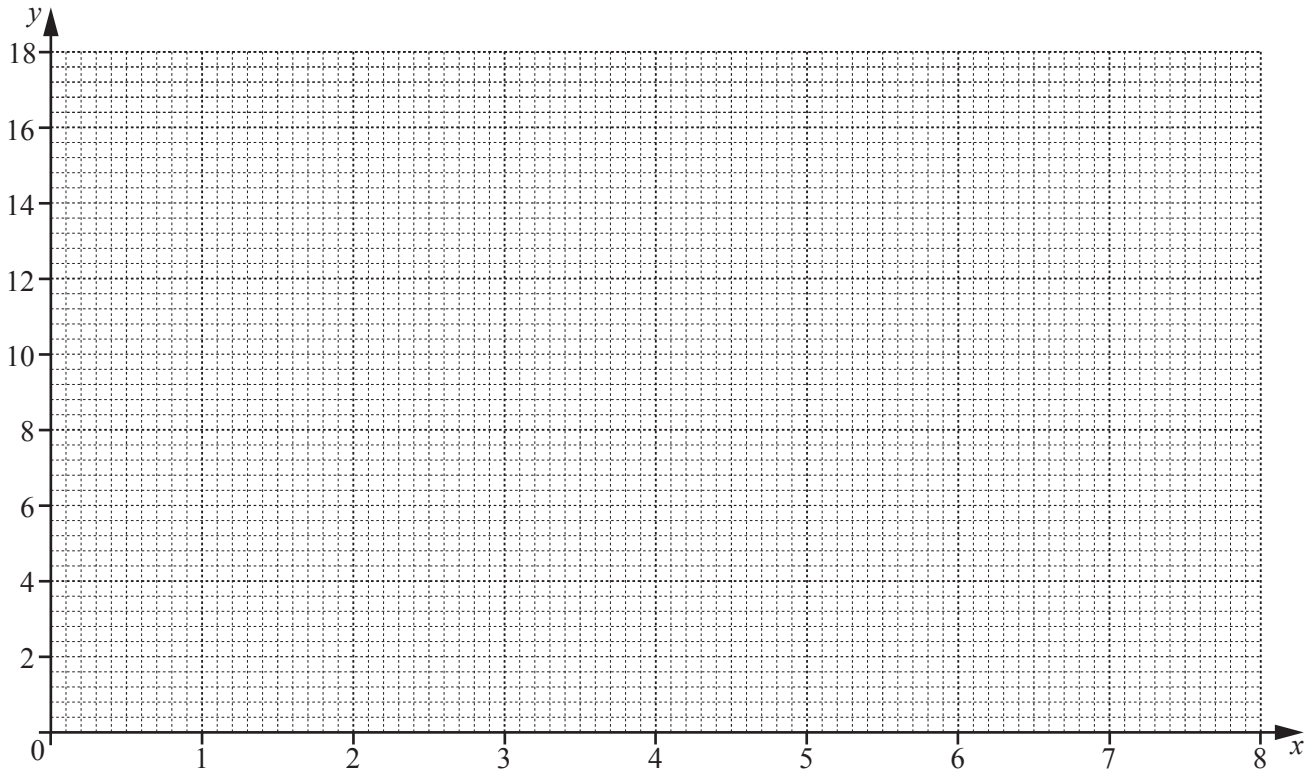
..... [3]

8 **(a)** Complete the table of values for $y = 8x - x^2$.

x	0	1	2	3	4	5	6	7	8
y	0		12	15		15	12		

[3]

(b) On the grid, draw the graph of $y = 8x - x^2$ for $0 \leqslant x \leqslant 8$.



[4]

(c) Write down the equation of the line of symmetry of this graph.

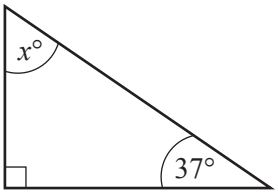
..... [1]

(d) Use the graph to solve $8x - x^2 = 10$.

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

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9 **(a)** The diagram shows a right-angled triangle.

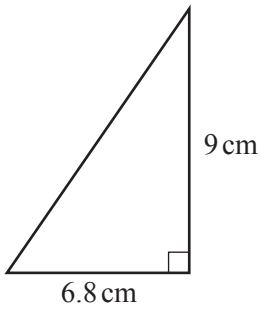


NOT TO SCALE

Find the value of x.

$x =$ ..... [1]

(b) The diagram shows another right-angled triangle.



NOT TO SCALE

(i) Work out the area of the triangle.
Give the units of your answer.

.... [3]

(ii) Calculate the perimeter of the triangle.

..... cm [3]

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