Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

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.

© UCLES 2018

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.

View solution

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.

View solution

How many boxes do they fill?

..... [2]

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

View solution

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.

View solution

Work out how much money they each receive.

Alison \$ .....

Bob \$ .....

Jenny \$ ..... [3]

© UCLES 2018

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

View solution

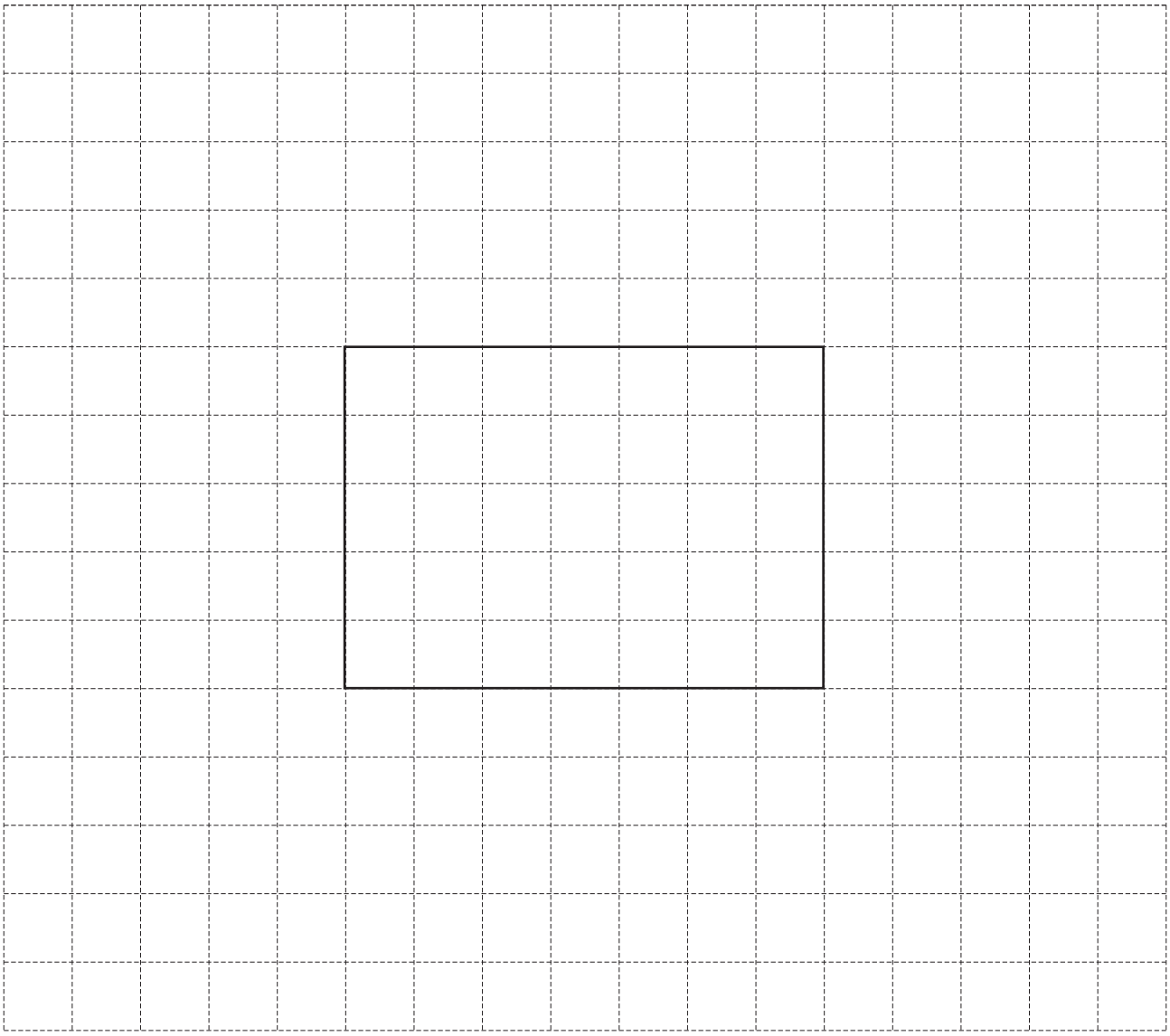
Work out the percentage decrease in the mass of strawberries they picked from 2016 to 2017.

.....% [3]

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

View solution

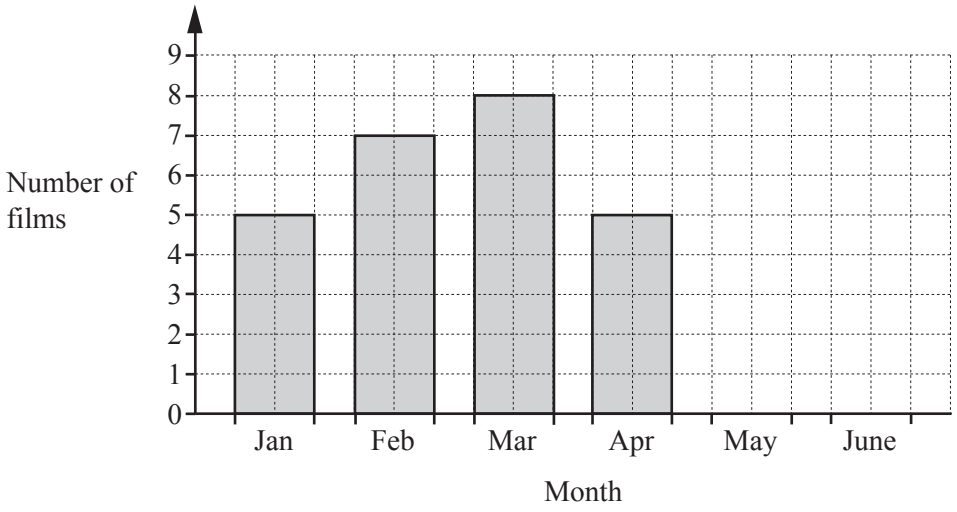
Complete the net of the box.
The base of the box has been drawn for you.



[2]

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

View solution



(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?

View solution

..... [1]

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

View solution

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.

View solution

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

Ticket prices	
Adult	$10.50
Child	$ 6.25
Senior	$ 9.00

$ ..... [3]

© UCLES 2018

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

Find the percentage of these people that are children.

View solution

.....% [1]

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

Find the time when the film ends.

View solution

..... [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.

View solution

..... [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.

View solution

$ ..... [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.

View solution

.....°C [1]

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

Work out the new temperature in the freezer.

View solution

.....°C [1]

© UCLES 2018

3 **(a)** Simplify.

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

View solution

..... [2]

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

View solution

..... [2]

(b) Solve.

$3x - 2 = 5x + 1$

View solution

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

(c) Factorise completely.

$3x^2y - 5xy$

View solution

..... [2]

(d) Make r the subject of the formula.

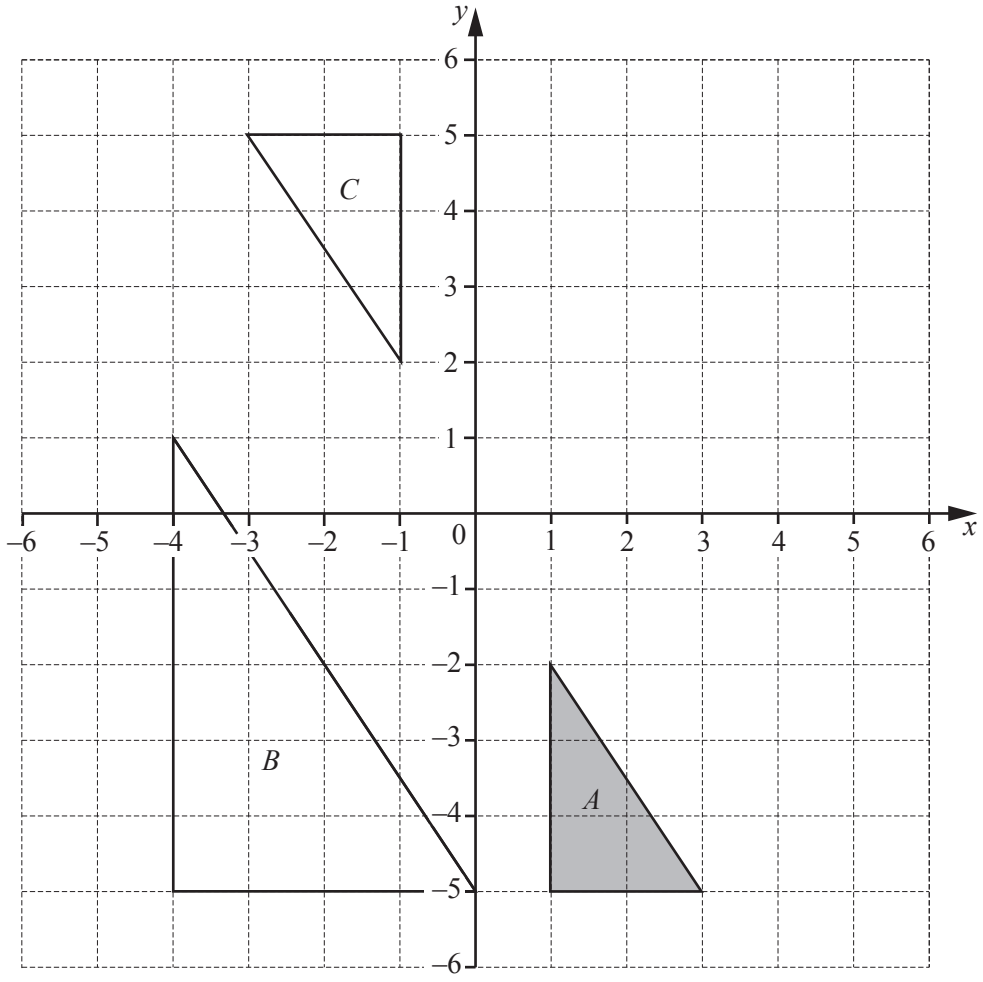
$T = 3(r + 5)$

View solution

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

© UCLES 2018

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



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

View solution

.....

..... [3]

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

View solution

.....

..... [3]

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

View solution [2]

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

View solution

© UCLES 2018

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

View solution



[2]

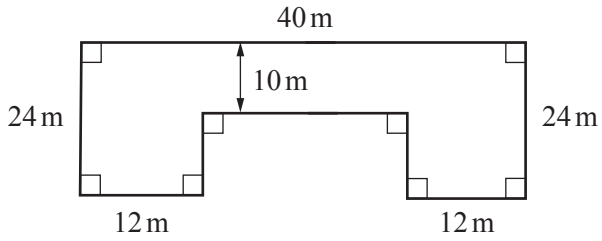
(b) Work out the size of one interior angle of a regular hexagon.

View solution

..... [3]

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

View solution



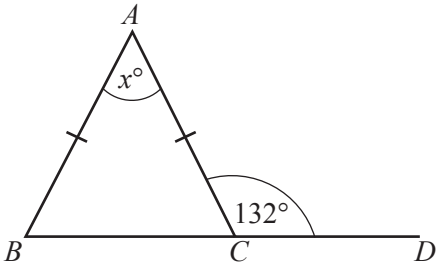
NOT TO SCALE

Work out the area of the garden.

..... m^2 [3]

(d)

View solution



NOT TO SCALE

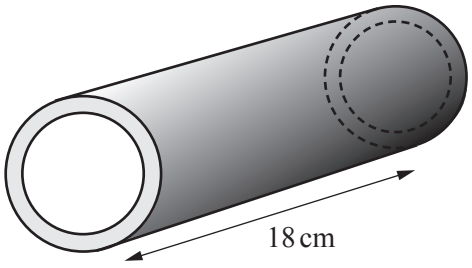
The diagram shows an isosceles triangle, *ABC*.
BCD is a straight line.

Find the value of x.

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

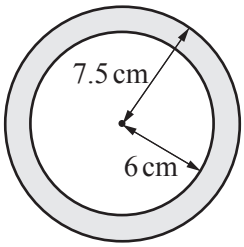
(e) The diagram shows a hollow metal pipe in the shape of a cylinder.

View solution



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.

View solution

Work out the volume of the metal.

.....cm^3 [1]

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

View solution

.....cm^2 [3]

© UCLES 2018

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

View solution

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.

View solution

..... [3]

(iii) Jules says that the median is 3.5 .

View solution

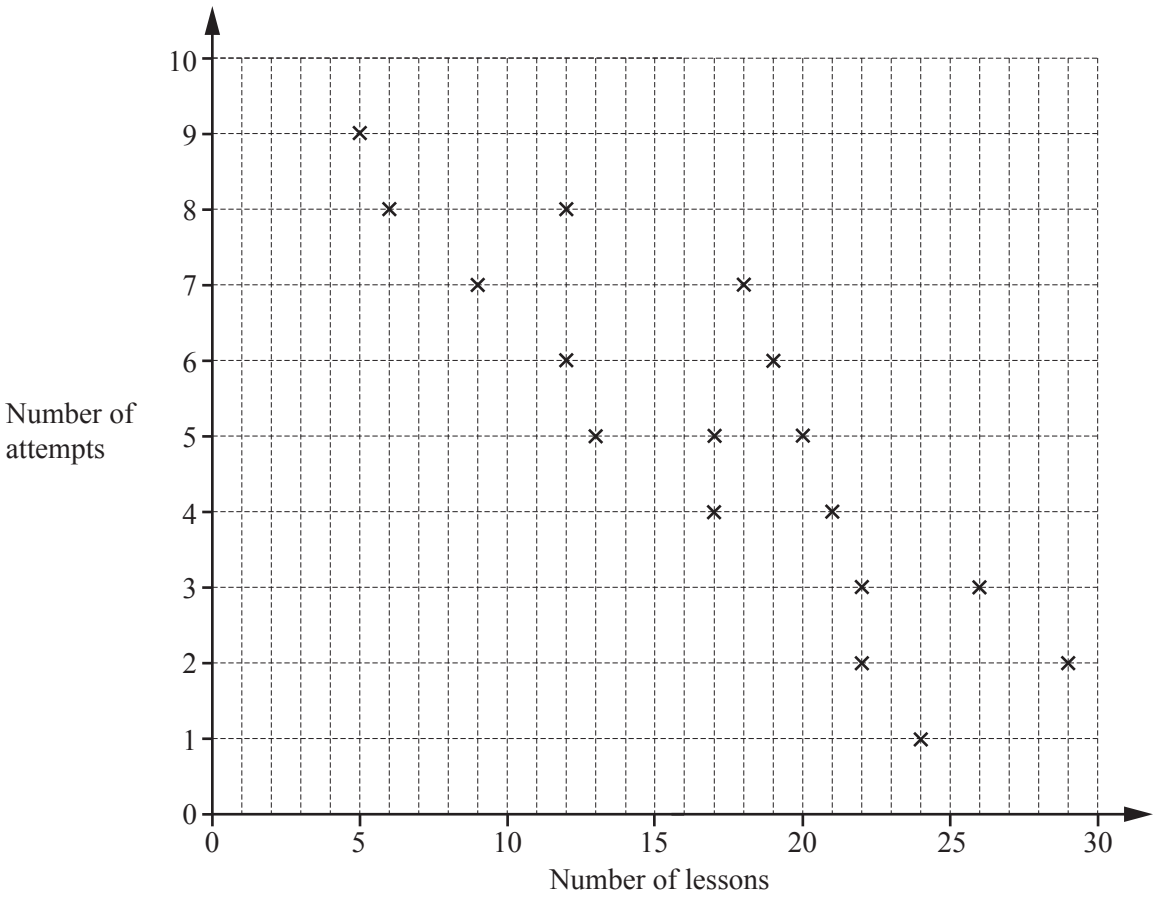
Show that he is wrong.

.....

..... [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.

View solution



(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]

© UCLES 2018

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

View solution

..... [1]

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

View solution

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

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

smallest

(c)

View solution

$\sqrt{64}$ 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,

View solution

..... [1]

(iii) irrational.

View solution

..... [1]

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

View solution

Complete this statement about the value of n.

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

(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.

View solution

..... [3]

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

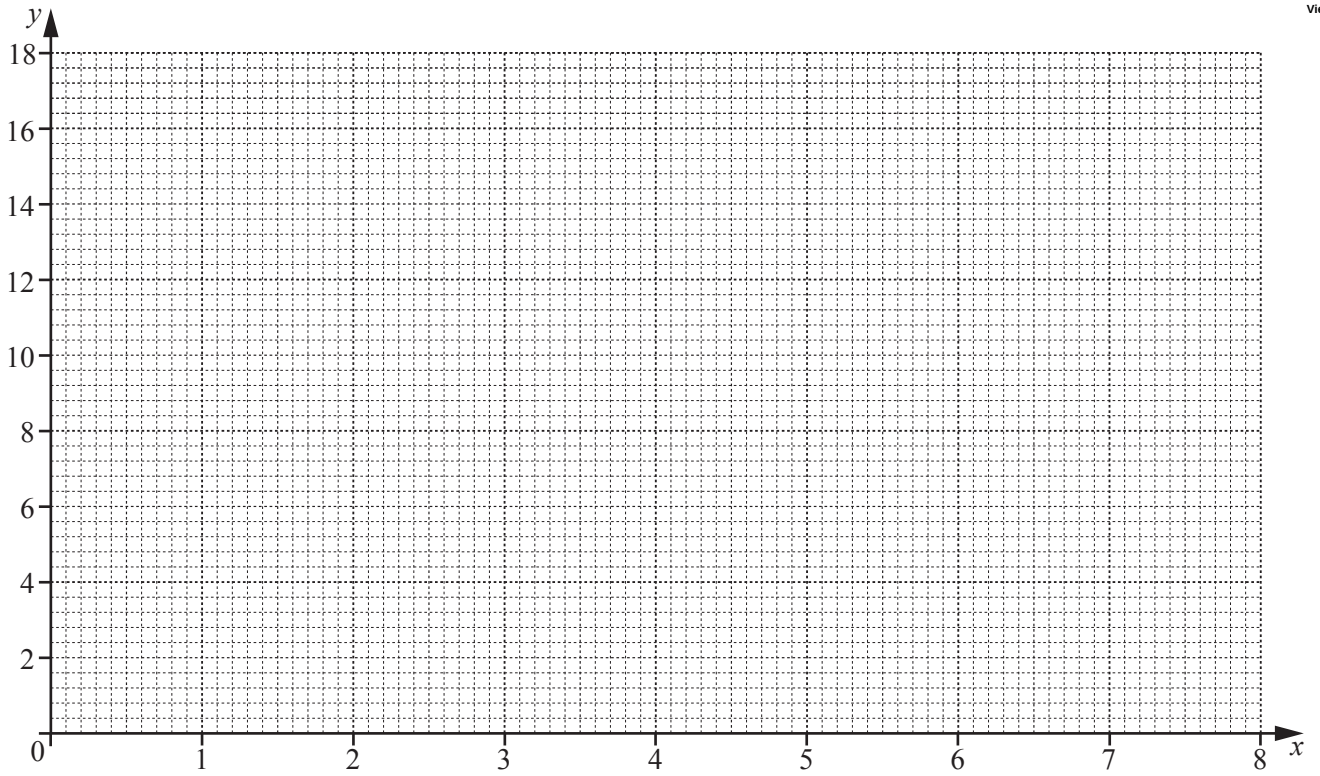
View solution

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 $0 \leqslant x \leqslant 8$.

View solution



[4]

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

View solution

..... [1]

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

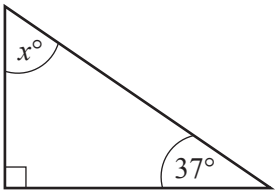
View solution

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

© UCLES 2018

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

View solution



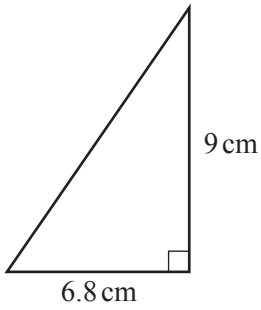
NOT TO SCALE

Find the value of x.

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

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

View solution



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.

View solution

..... cm [3]

© UCLES 2018

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.