

Name: _____

GCSE Unit 6a Practice Assessment

Date: _____

Time: 60 minutes

Total marks available: 54

Total marks achieved: _____

Questions

Q1.

The point A has coordinates $(2, 3)$.

The point B has coordinates $(6, 8)$.

M is the midpoint of the line AB .

Find the coordinates of M .

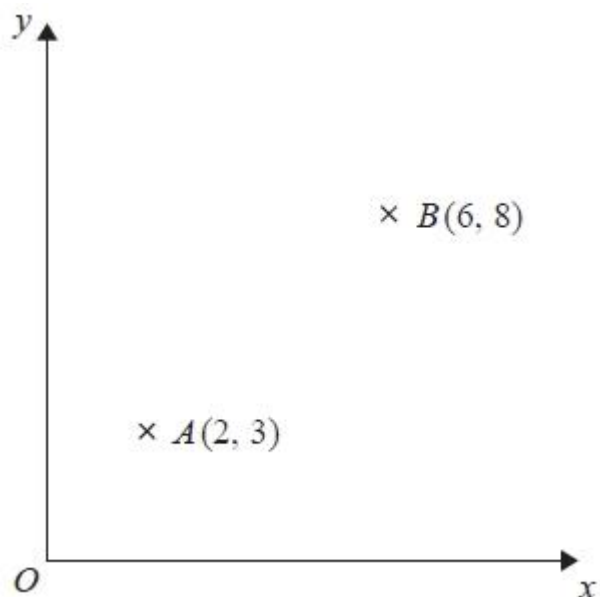
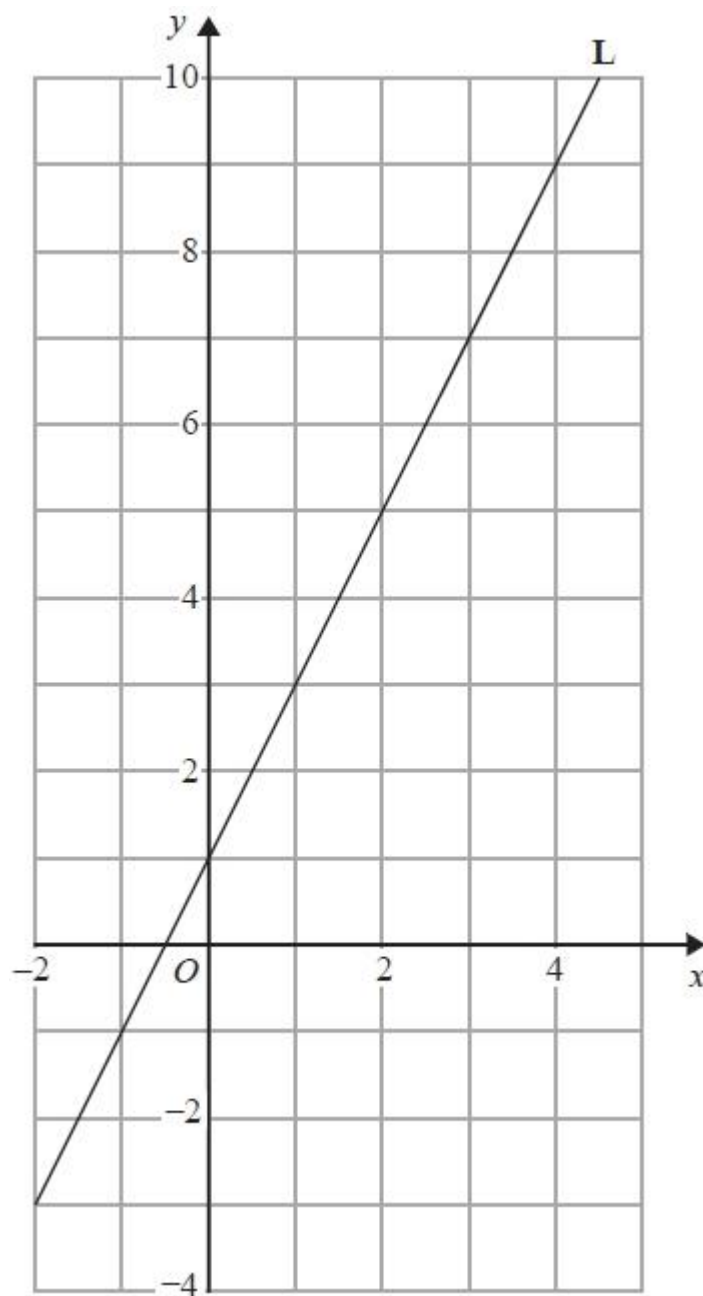


Diagram **NOT** accurately drawn

.....
(Total for Question is 2 marks)

Q2.

Line **L** is drawn on the grid below.

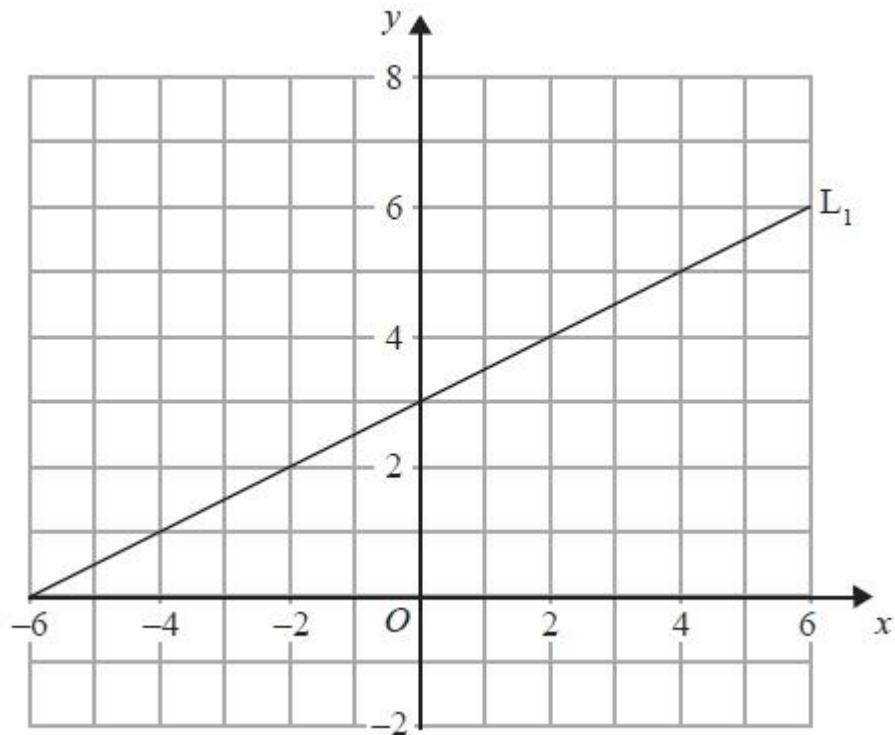


Find the equation for the straight line **L**.
Give your answer in the form $y = mx + c$

.....
(Total for question is 3 marks)

Q3.

The diagram shows a straight line, L_1 , drawn on a grid.



A straight line, L_2 , is parallel to the straight line L_1 and passes through the point $(0, -5)$.

Find an equation of the straight line L_2 .

.....
(Total for Question is 3 marks)

Q4.

Here are the equations of four straight lines.

Line A $y = 2x + 4$
Line B $2y = x + 4$
Line C $2x + 2y = 4$
Line D $2x - y = 4$

Two of these lines are parallel.

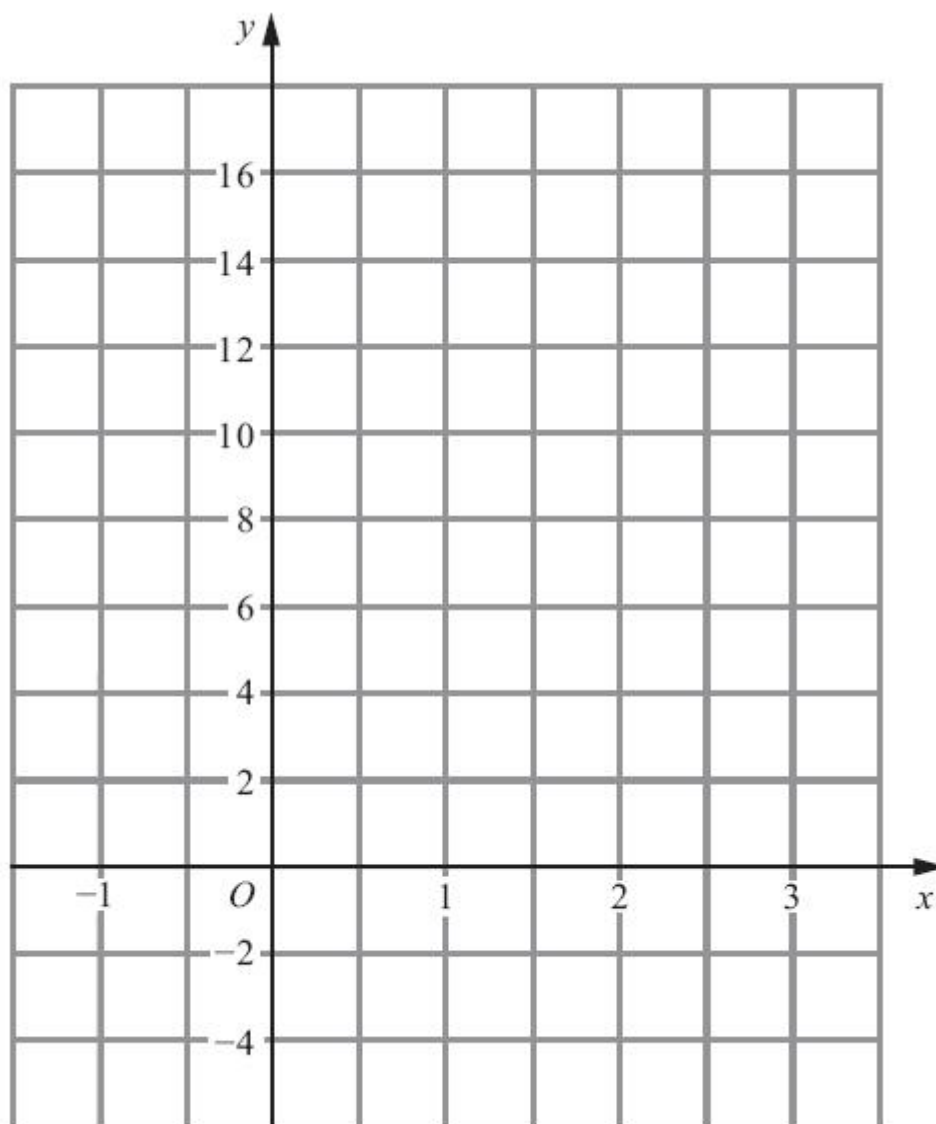
Write down the two parallel lines?

Line and line

(Total for question is 1 mark)

Q5.

(a) On the grid, draw the graph of $y = 4x + 2$ from $x = -1$ to $x = 3$



(3)

(b) (i) Write down the equation of a straight line that is parallel to $y = 4x + 2$

.....

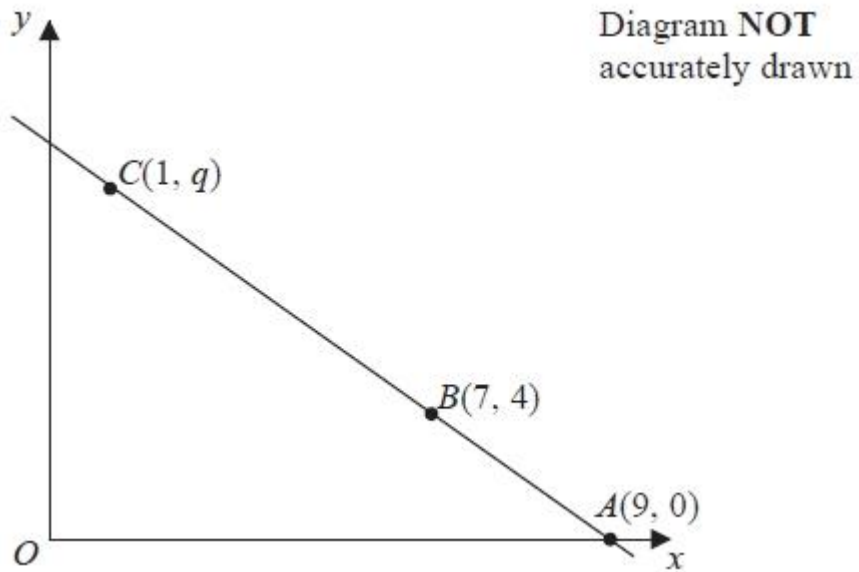
(ii) Write down the gradient of a straight line that is perpendicular to $y = 4x + 2$

.....

(2)

(Total for Question is 5 marks)

Q6.



The points A , B and C lie on a straight line.

The coordinates of A are $(9, 0)$.

The coordinates of B are $(7, 4)$.

The coordinates of C are $(1, q)$.

Work out the value of q .

.....

(Total for Question is 3 marks)

Q7.

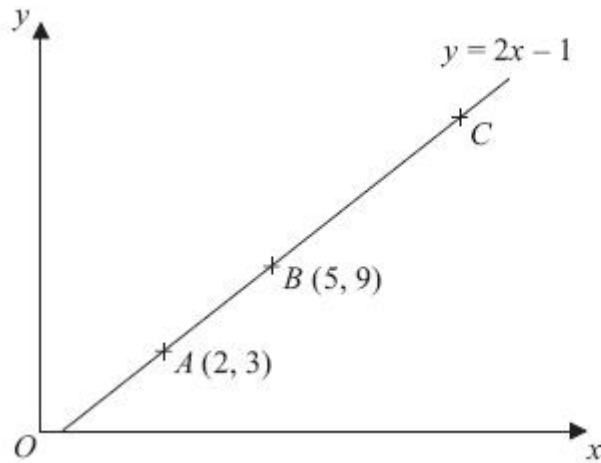


Diagram **NOT**
accurately drawn

In the diagram,

the points A , B and C lie on the straight line $y = 2x - 1$

The coordinates of A are $(2, 3)$.

The coordinates of B are $(5, 9)$.

Given that $AC = 3AB$, find the coordinates of C .

.....
(Total for Question is 3 marks)

Q8.

* A is the point with coordinates $(1, 3)$

B is the point with coordinates $(4, -1)$

The straight line L goes through both A and B .

Is the line with equation $2y = 3x - 4$ perpendicular to line L ?

You must show how you got your answer.

(Total for Question is 4 marks)

Q9.

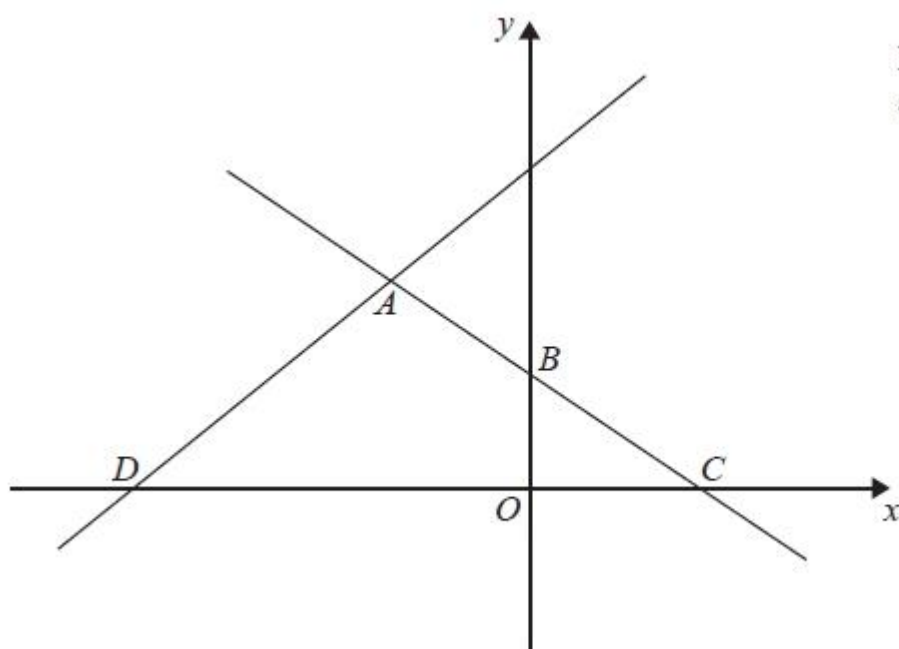


Diagram NOT
accurately drawn

In the diagram, ABC is the line with equation $y = -\frac{1}{2}x + 5$

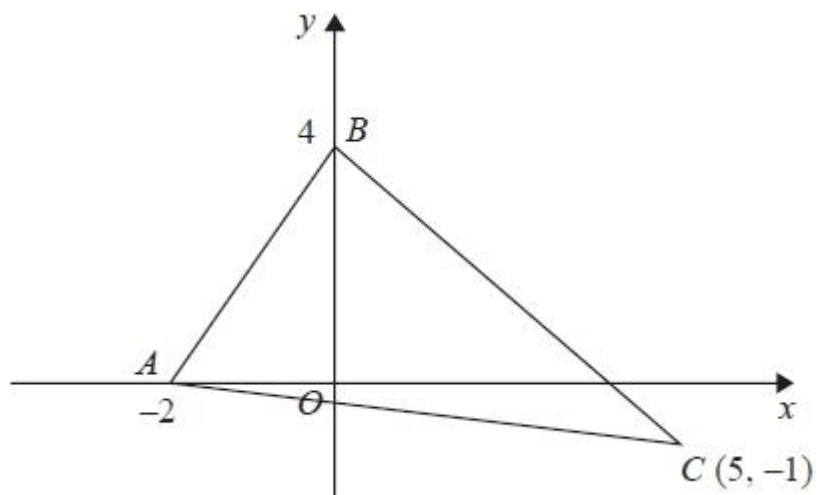
$AB = BC$

D is the point with coordinates $(-13, 0)$

Find an equation of the line through A and D .

.....
(Total for question = 5 marks)

Q10.



Find an equation of the line that passes through C and is perpendicular to AB .

.....
(Total for question is 4 marks)

Q11.

You can use this formula to change a temperature C , in $^{\circ}\text{C}$, to a temperature F , in $^{\circ}\text{F}$.

$$F = 1.8C + 32$$

(a) Use the formula to change 20°C into $^{\circ}\text{F}$.

..... $^{\circ}\text{F}$

(2)

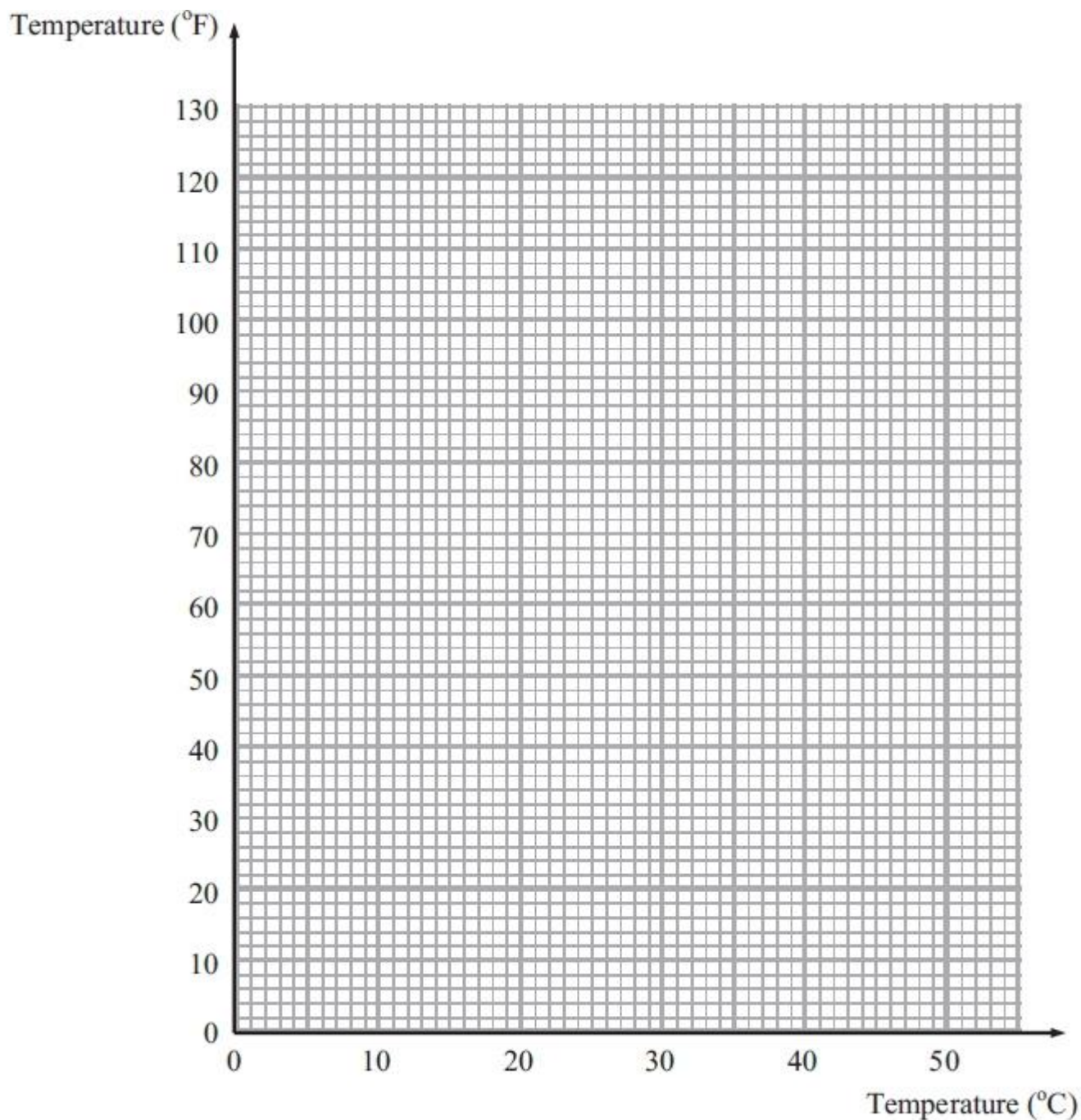
(b) On the grid opposite, draw a conversion graph that can be used to change between temperatures in $^{\circ}\text{C}$ and temperatures in $^{\circ}\text{F}$.

(3)

(c) Use your graph to change 100°F into $^{\circ}\text{C}$.

..... $^{\circ}\text{C}$

(1)

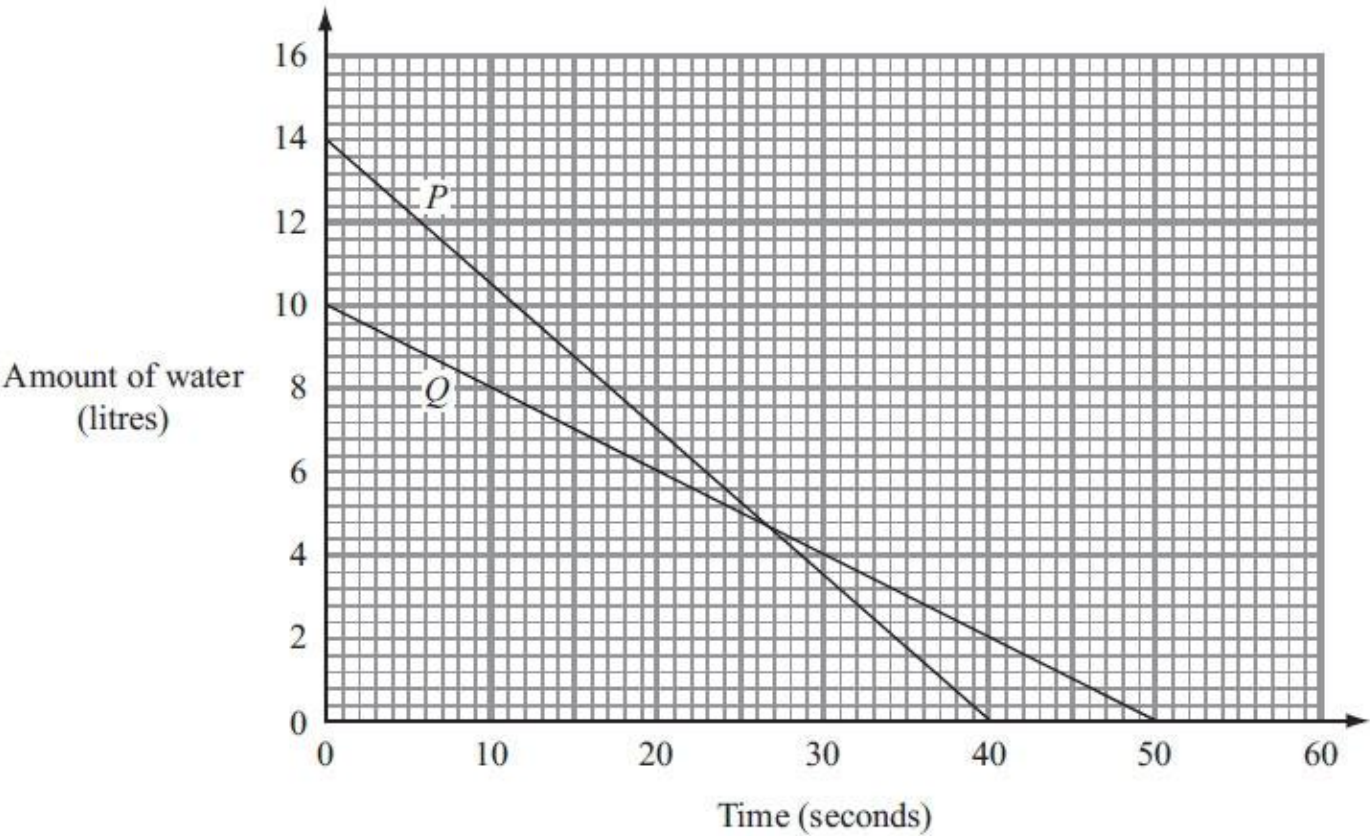


(Total for Question is 6 marks)

Q12.

Water is leaking out of two containers.
The water started to leak out of the containers at the same time.

The straight line P shows information about the amount of water, in litres, in container P .
The straight line Q shows information about the amount of water, in litres, in container Q .



(a) Work out the gradient of line P .

.....
(2)

One container will become empty first.

(b) (i) Which container?

You must explain your answer.

.....
.....

(ii) How much water is then left in the other container?

..... litres
(2)

(Total for Question is 4 marks)

Q13.

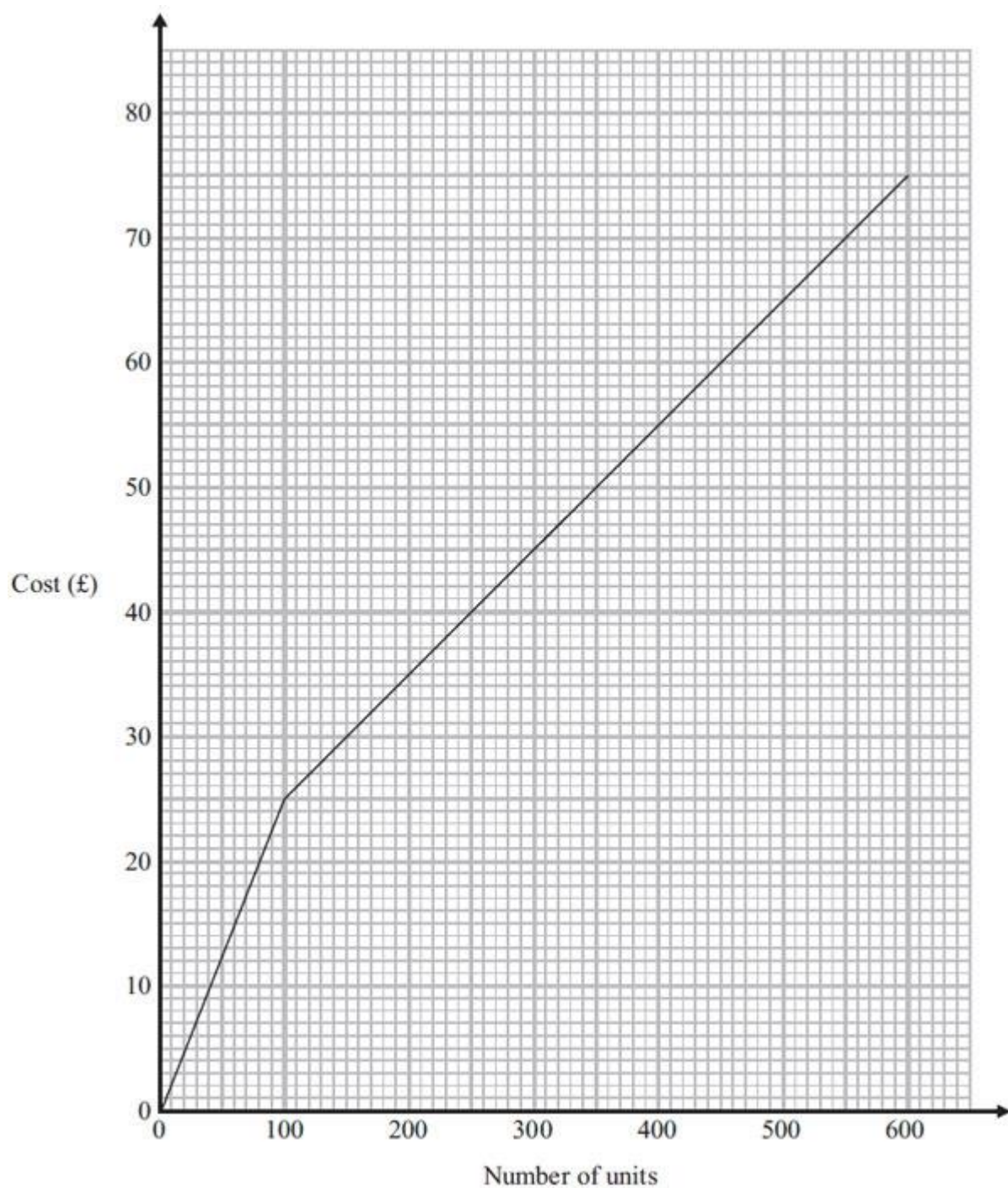
You can use the graph opposite to find out how much Lethna has to pay for the units of electricity she has used.

Lethna pays at one rate for the first 100 units of electricity she uses.
She pays at a different rate for all the other units of electricity she uses.

Lethna uses a total of 900 units of electricity.

Work out how much she must pay.

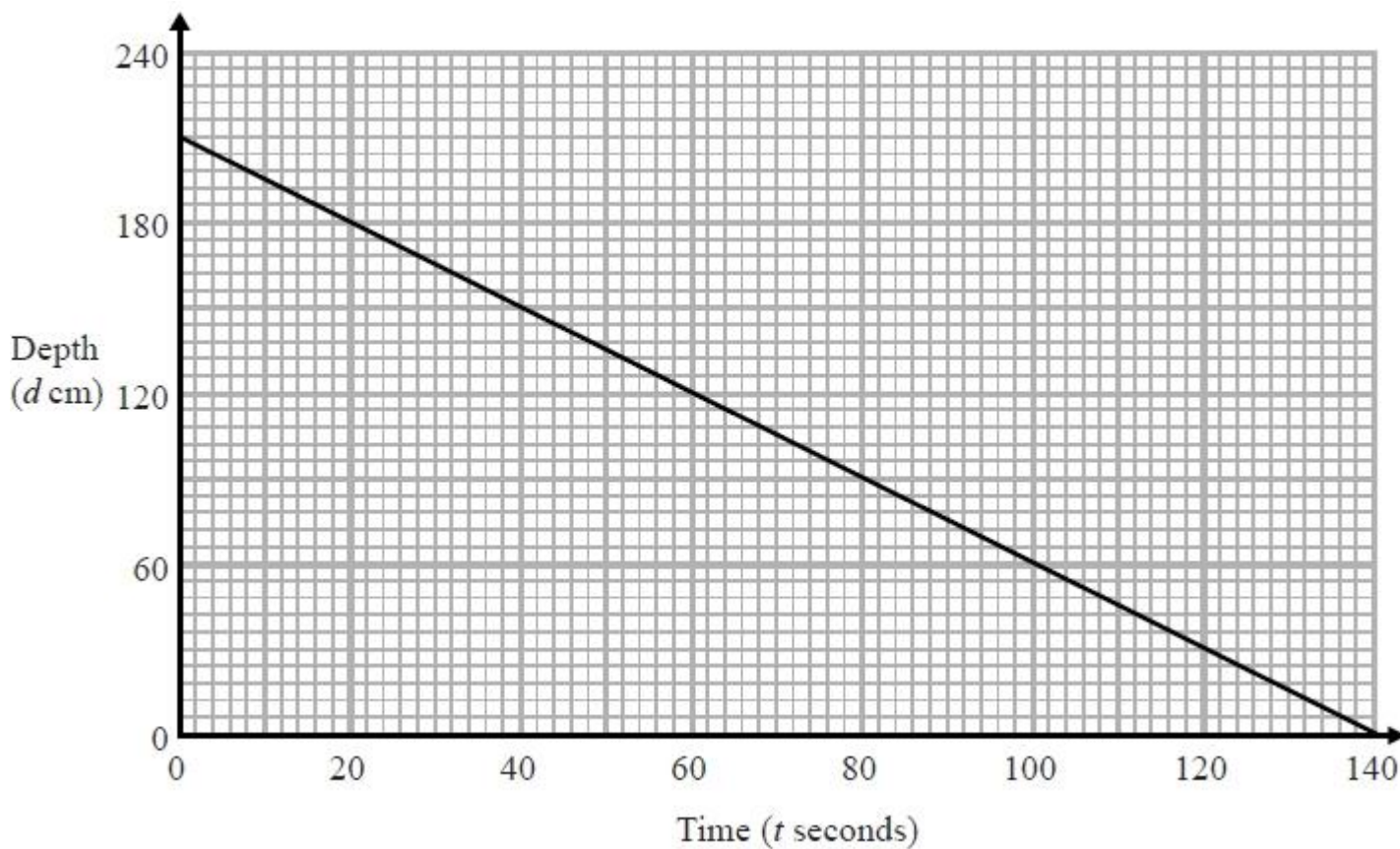
.....



(Total for Question is 3 marks)

Q14.

The graph shows the depth, d cm, of water in a tank after t seconds.



(a) Find the gradient of this graph.

.....

(2)

(b) Explain what this gradient represents.

.....

.....

(1)

(Total for question is 3 marks)

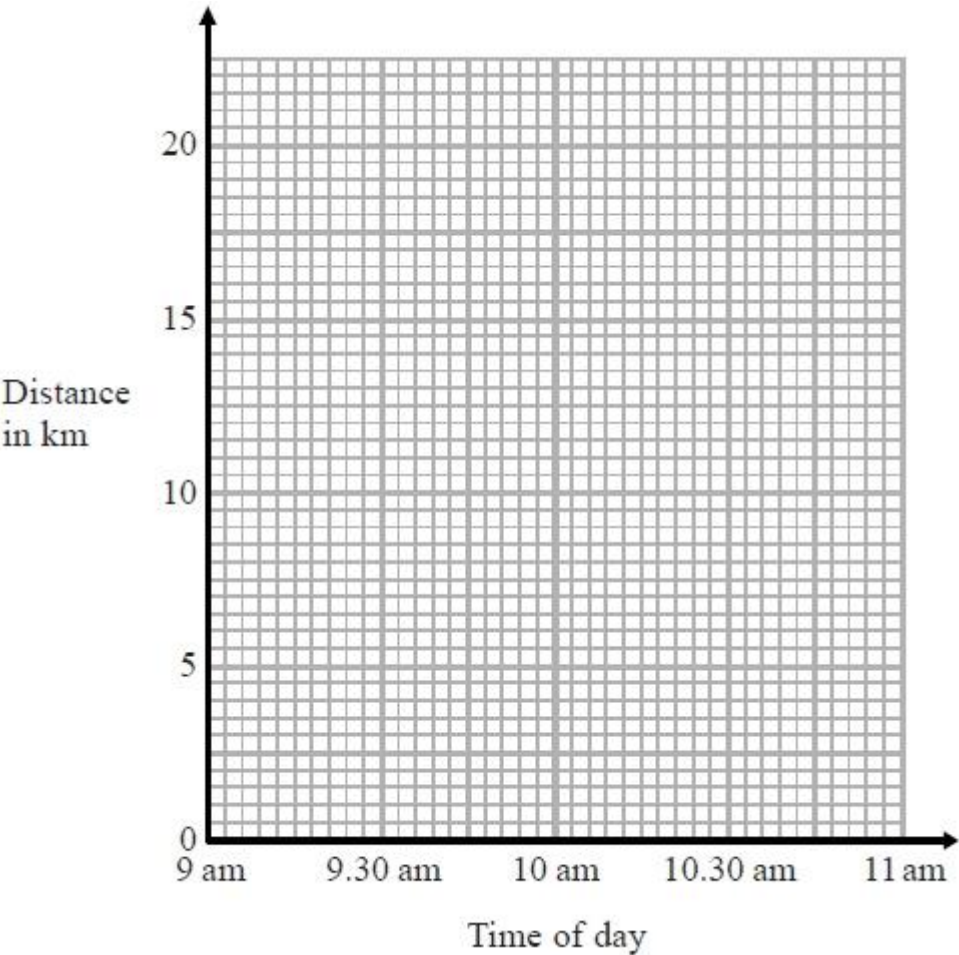
Q15.

At 9 am, Bradley began a journey on his bicycle.

From 9 am to 9.36 am, he cycled at an average speed of 15 km/h.

From 9.36 am to 10.45 am, he cycled a further 8 km.

(a) Draw a travel graph to show Bradley's journey.



(3)

From 10.45 am to 11 am, Bradley cycled at an average speed of 18 km/h.

(b) Work out the distance Bradley cycled from 10.45 am to 11 am.

..... km

(2)

(Total for question is 5 marks)