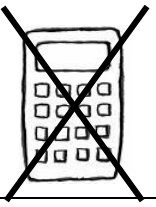
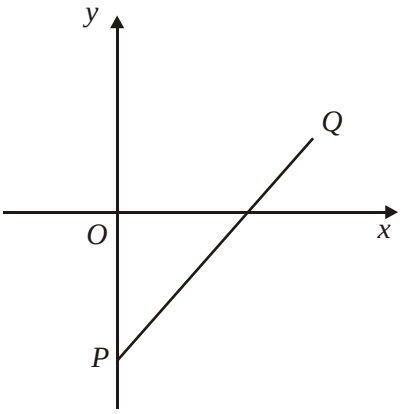
Name:	Teacher Assessment



Section A Plotting Straight Line Graphs Grade D / C

1. The diagram shows the points P (0, –4) and Q (5, 2).



Find the coordinates of the mid-point of the line segment PQ.

.....

.....

.....

Answer (..... , ...)

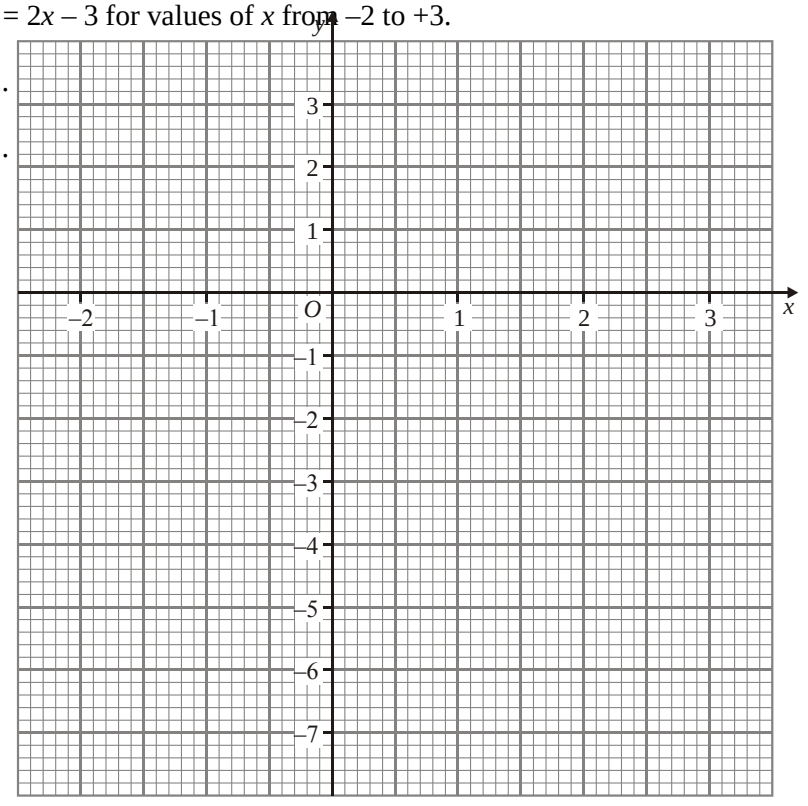
(Total 2 marks)

2. (a) On the grid below, draw the graph of $y = 2x - 3$ for values of x from –2 to +3.

.....

.....

(3)



(b) The line $y = 2$ crosses $y = 2x - 3$ at P.

Write down the coordinates of P.

Answer (..... , ...)

(1)(Total 4 marks)

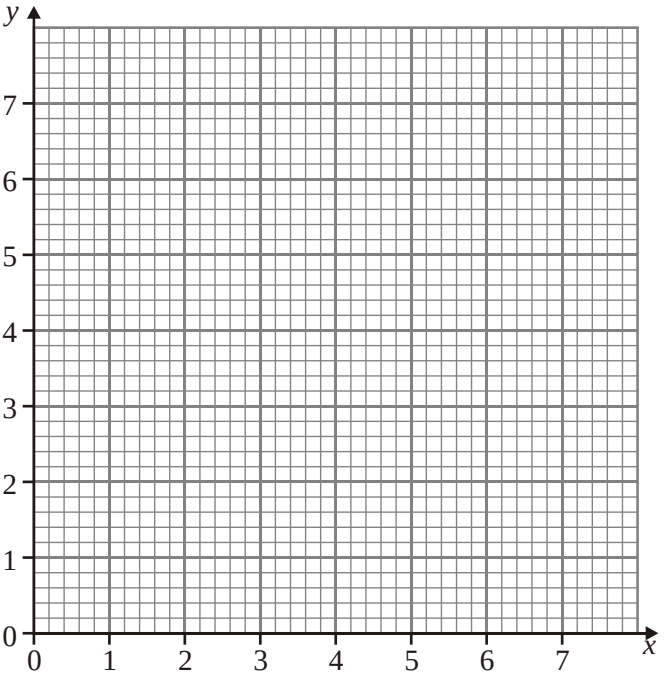
3. On the grid below, draw the graph of $y = 7 - x$ for values of x from 0 to 7.

.....

.....

.....

(Total 3 marks)

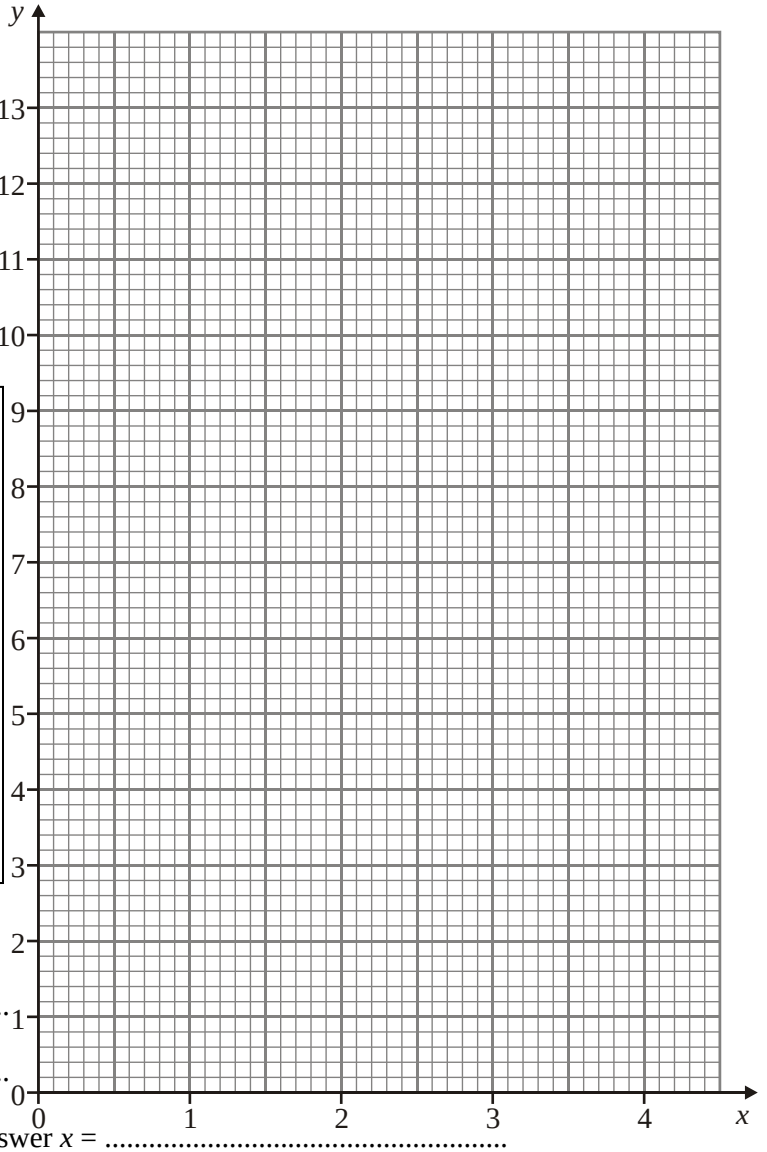


4. (a) On the grid draw the graph $y = 2x + 3$ for values of x from 0 to 4.

.....

.....

(3)



Success:	Target:

(b) Solve $2x + 3 = 7.5$

.....

.....

Answer x = ...

(2)(Total 5 marks)

Teacher Assessment

Section B y = mx + c Grade C / B

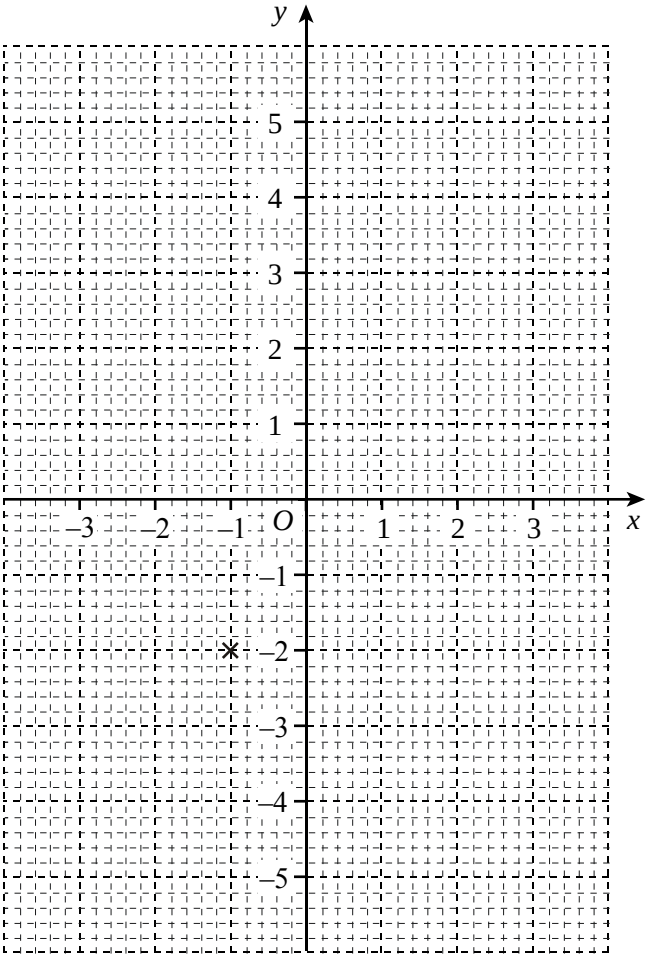
1. A straight line has gradient 3 and passes through the point (–1, –2).

Draw the straight line on the grid below.

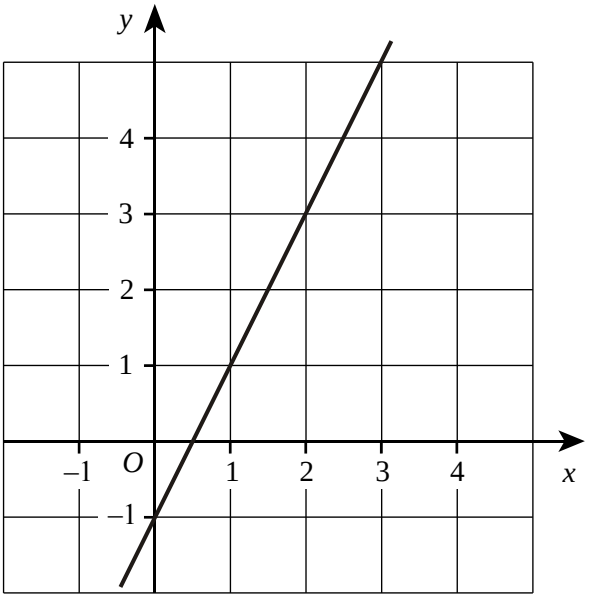
.....

.....

(Total 2 marks)



2. The diagram shows the graph of the equation $y = ax + b$



Find the values of a and b.

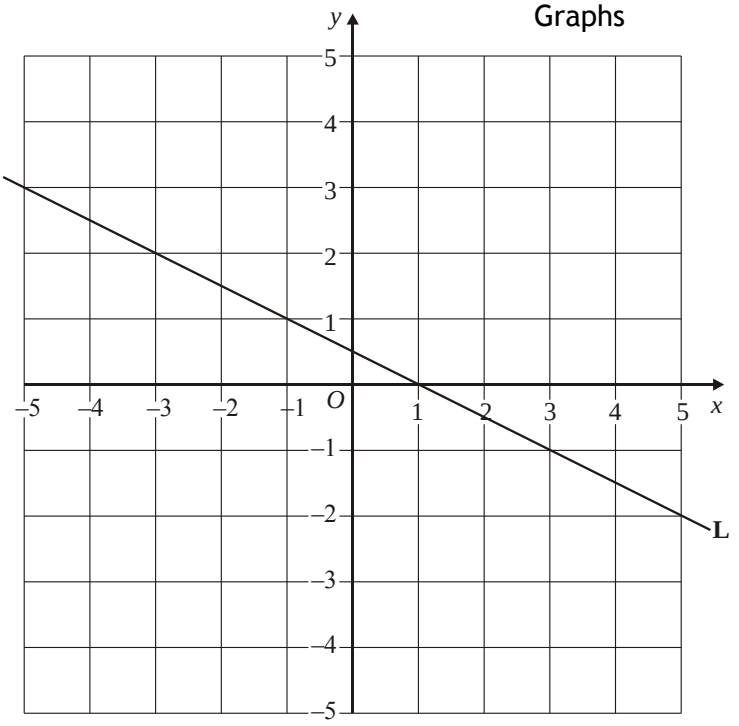
.....

.....

Answer a = ... , b = ...

(Total 3 marks)

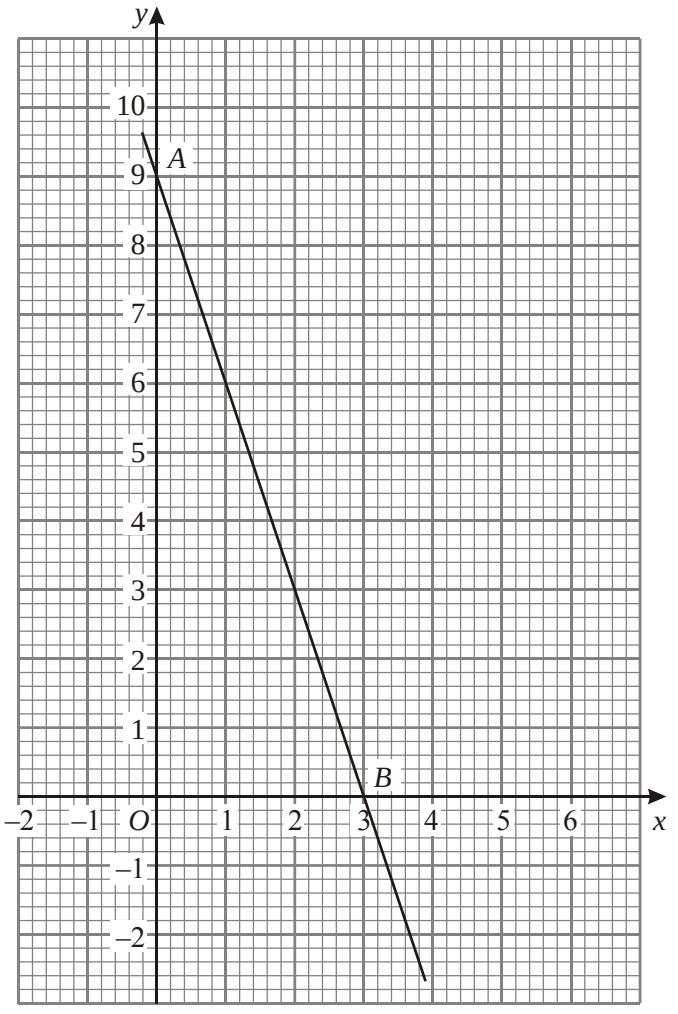
3. Find the equation of the line L.



Answer .....

(Total 3 marks)

4. (a) Find the equation of the line *AB*.



Answer .....

(3)

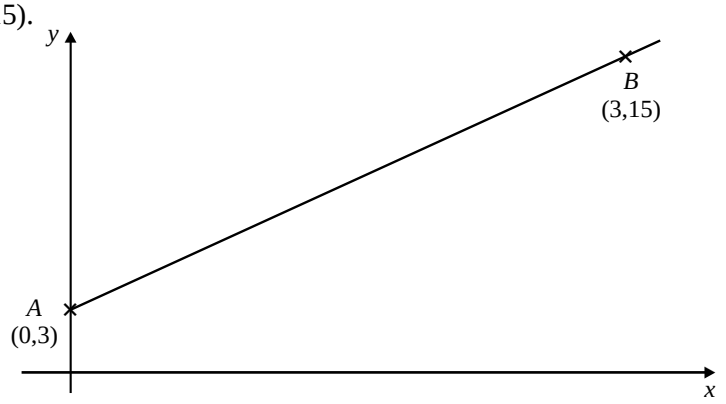
(b) Give the *y*-coordinate of the point on the line with an *x*-coordinate of 6.

Answer .....

(2)

(Total 5 marks)

5. The diagram shows the points $A(0,3)$ and $B(3,15)$.



Find the equation of the line AB.

.....

.....

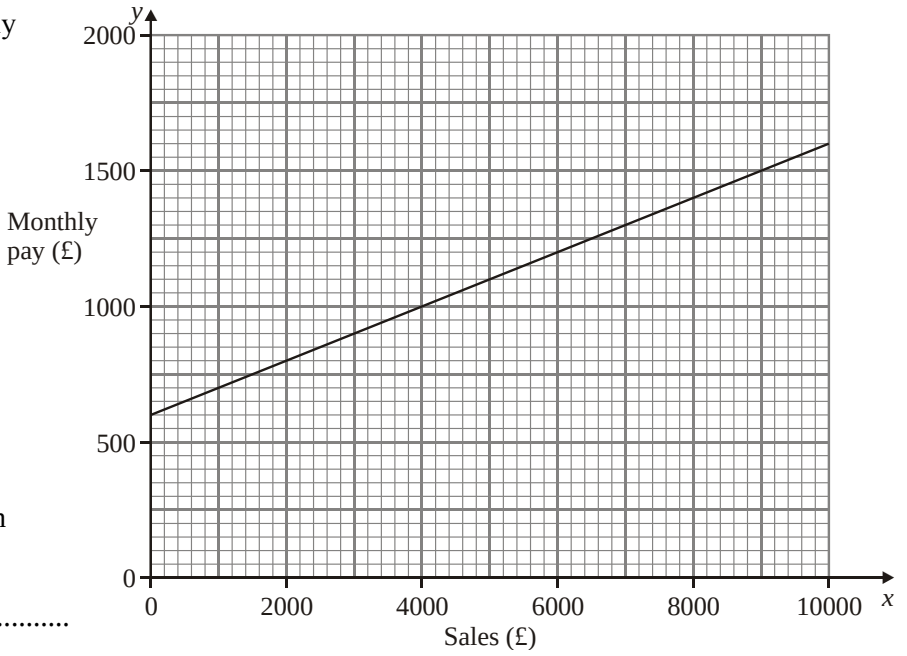
.....

.....

Answer .....

(Total 3 marks)

6. The graph shows how Ellie's monthly pay depends on her sales.



(a) Find the equation of the line in the form $y = mx + c$

.....

.....

.....

Answer y = ...

(3)

(b) Calculate Ellie's pay when her sales are £16 000.

.....

.....

Answer £ .....

(2)(Total 5 marks)

7. Find the equation of the line through (0, –2) and (4, 18).

.....

.....

.....

.....

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.....

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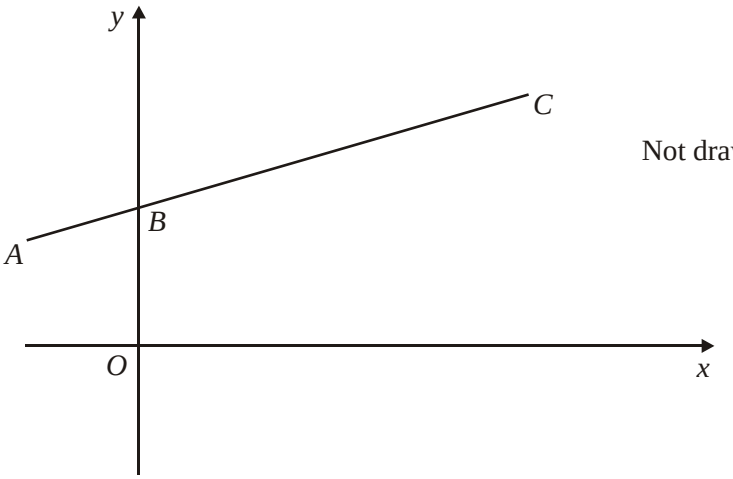
Answer .....

(Total 3 marks)

8. The diagram shows the points A (–2, 2), B(0, 3) and C(8, 7).



Not drawn accurately

Find the equation of the straight line which passes through A, B and C.

.....

.....

.....

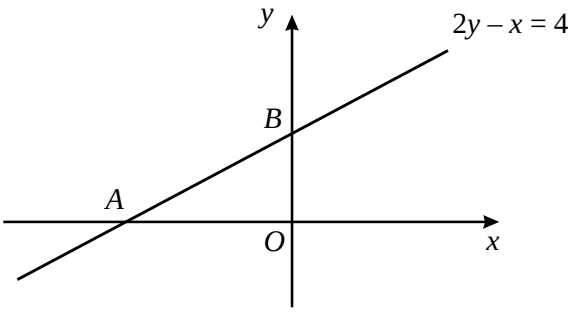
.....

.....

Answer y = ……

(Total 3 marks)

9. A sketch of the line $2y - x = 4$ is shown.
The line crosses the axes at A and B.



(a) Calculate the coordinates of A and B.

.....

.....

.....

.....

Answer A(....., ...), B (....., ...)

(2)

(b) Calculate the gradient of the line AB.

.....

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.....

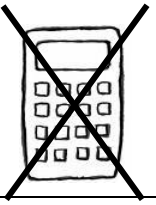
.....

Answer .....

(2)
(Total 4 marks)

Success:	Target:

Teacher Assessment



Section C Parallel and Perpendicular Lines Grade B / A

1. Here are the equations of four straight lines.

Line 1: $y = x + 4$

Line 2: $y = 3x$

Line 3: $y = 3x + 5$

Line 4: $y = -x + 5$

(a) Which two lines are parallel?

.....

Answer ..... and .....

(1)

(b) Which two lines intersect the y axis at the same point?

.....

Answer ..... and .....

(1)

(Total 2 marks)

2. (a) Write down the equation of a line that is parallel to the line $y = 5x$

Answer .....

(1)

(b) Work out the gradient of the line $y + 2x = 6$

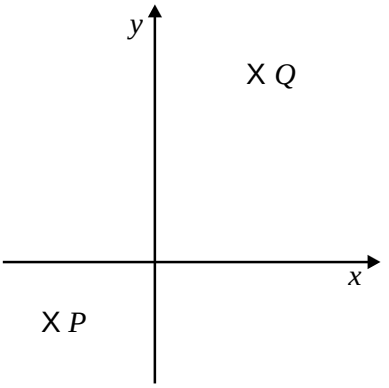
.....

Answer .....

(2)

(Total 3 marks)

3. The sketch below shows the points $P(-3, -2)$ and $Q(5, 13)$.



not drawn accurately

(a) Calculate the length of PQ.

.....

.....

.....

Answer.....units

(3)

(b) Find the equation of the line which is parallel to PQ and passes through the point (0, 2)

.....

.....

.....

Answer.....

(4)
(Total 7 marks)

4. The gradients of four lines are given below. Write down the gradient of the line perpendicular to each one.

(a) Line A gradient = $\frac{2}{3}$. Perpendicular gradient = ……..…….. (1)

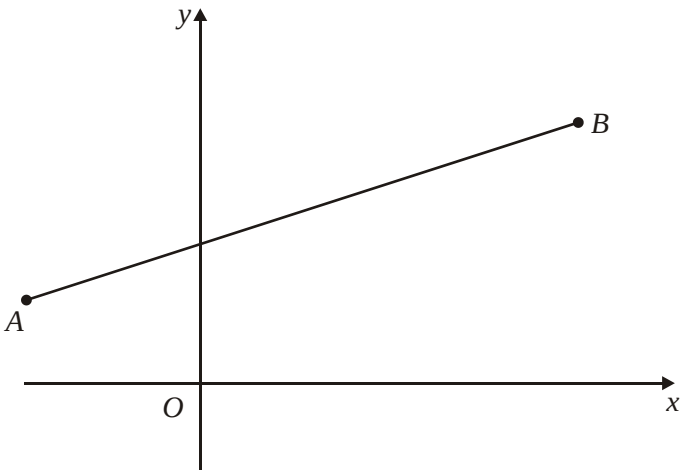
(b) Line B gradient = 4. Perpendicular gradient = ……..…….. (1)

(c) Line C gradient = $-\frac{1}{7}$. Perpendicular gradient = ……..…….. (1)

(d) Line D gradient = -0.4. Perpendicular gradient = ……..…….. (1)

(Total 4 marks)

5. The diagram shows the points $A(-2, 2)$ and $B(8, 7)$.



Not drawn accurately

Find the equation of the line perpendicular to AB and passing through $(0, 7)$.

.....

.....

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.....

Answer $y =$.....

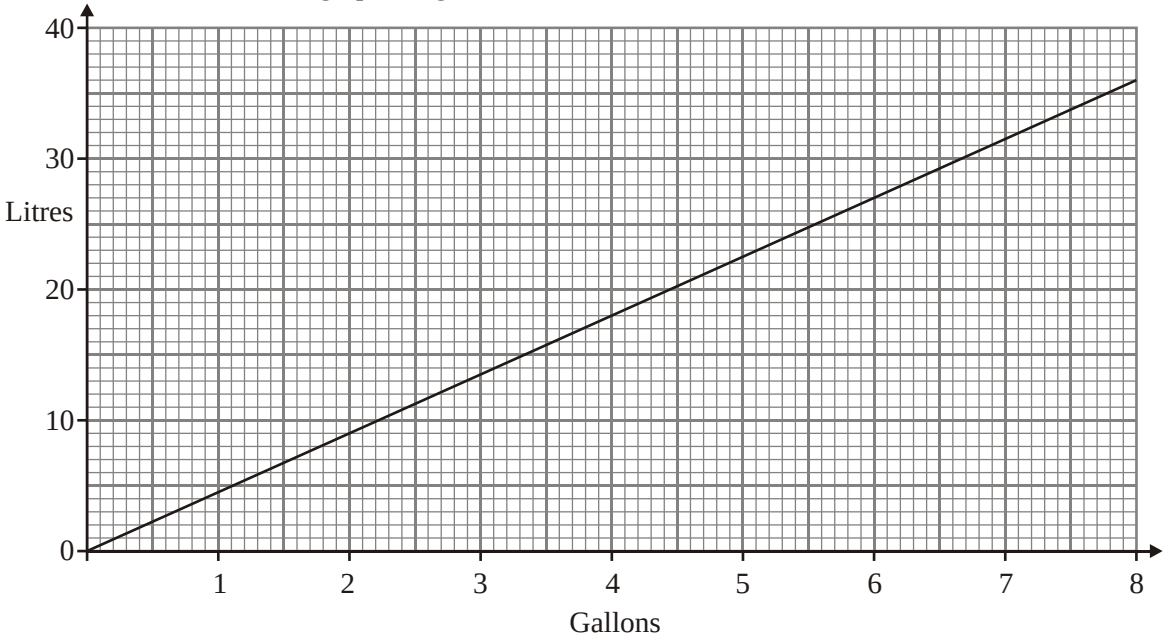
(Total 3 marks)

Success:	Target:

Teacher Assessment

Section D Real Life Graphs Grade D / C

1. This is a conversion graph for gallons and litres.



(a) Use the graph to convert

(i) 4 gallons to litres,

Answer ..... litres

(ii) 30 litres to gallons.

Answer ..... gallons

(2)

(b) 50 gallons is approximately 225 litres.
Explain how you can use the graph to show this.

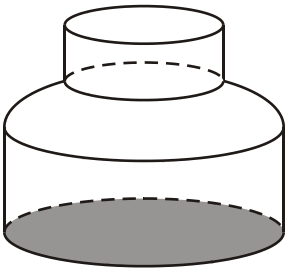
……

……

……

(1)
(Total 3 marks)

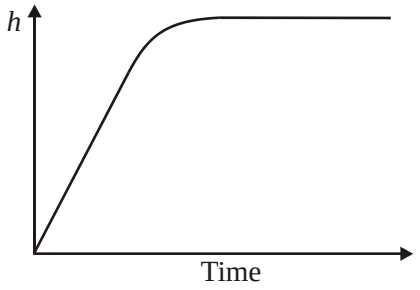
2. (a) Liquid is poured at a steady rate into the bottle shown in the diagram.



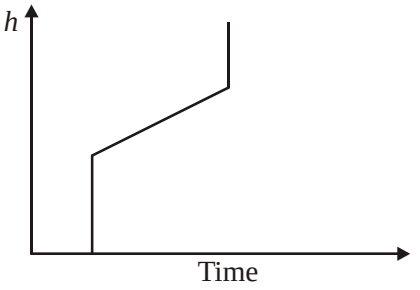
As the bottle is filled, the height, *h*, of the liquid in the bottle changes.

Which of the five graphs below shows this change? Give a reason for your choice.

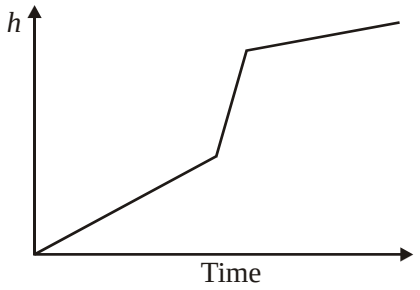
Graph A



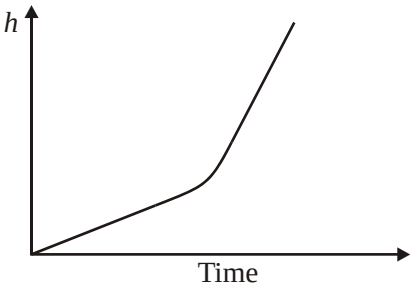
Graph B



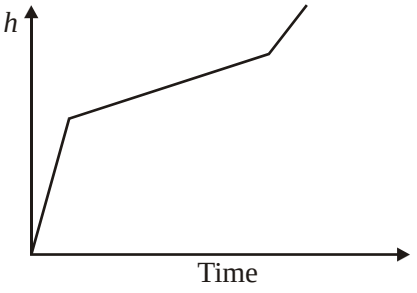
Graph C



Graph D



Graph E



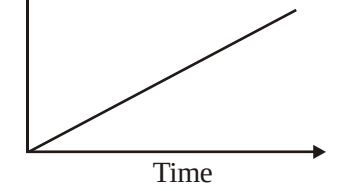
Graph ..……

Reason ……

.....……..

(2)

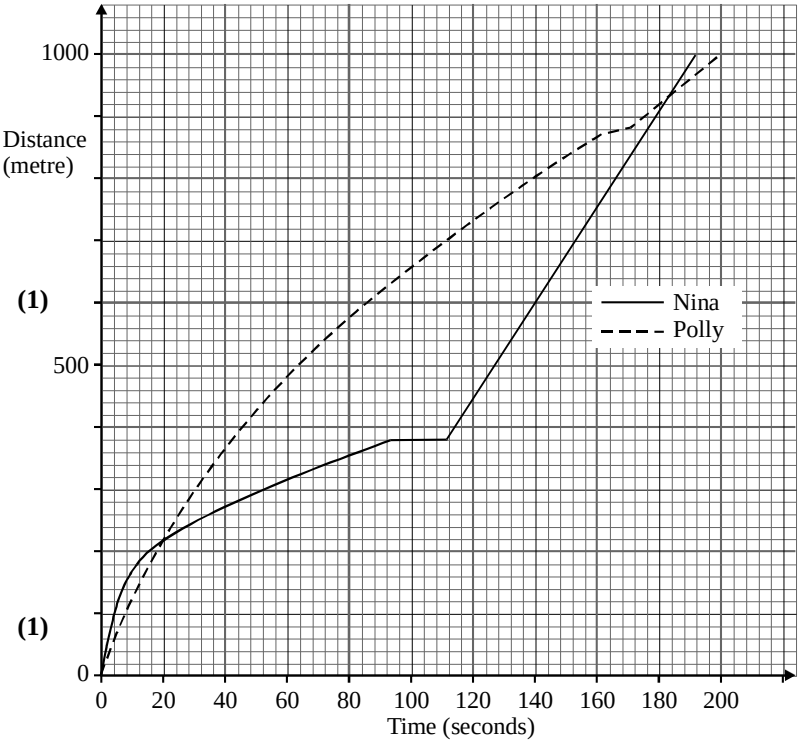
(b) Liquid is poured at a steady rate into another container.
The graph shows how the height, *h*, of the liquid in this container changes.



Sketch a picture of this container.

(1)(Total 3 marks)

4. The graph illustrates a 1000 metre race between Nina and Polly.



(a) Who was in the lead 10 seconds after the start of the race ?

Answer .....

(1)

(b) Describe what happened 20 seconds after the start of the race.

.....

.....

.....

(1)

(c) Describe what happened to Nina 90 seconds after the start of the race.

.....

.....

.....

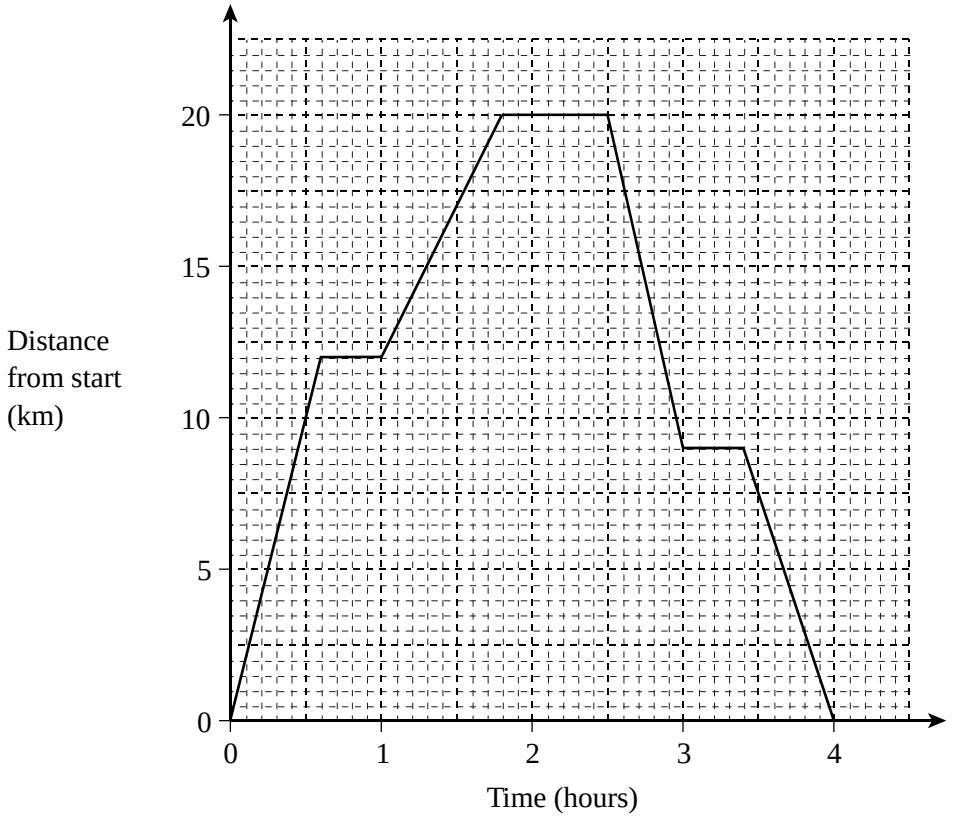
(1)

(d) Who won the race?

Answer .....

(1) (Total 4 marks)

5. The graph shows Adil's bicycle journey.



(a) How many times does Adil stop on his journey?

Answer ……

(1)

(b) How many times is Adil exactly 10 km from the start of his journey?

Answer ……

(1)

(c) What is the total distance that Adil travels on his journey?

Answer …….. km

(1)

(d) Calculate Adil's average speed during the first 30 minutes of his journey.
Give your answer in kilometres per hour.

.....

.....

.....

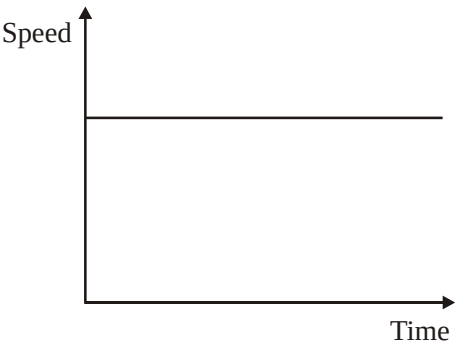
Answer ……km/h

(2)

(Total 5 marks)

6 The graphs show two parts of a train journey. Describe in words what is happening in each part.

(a)



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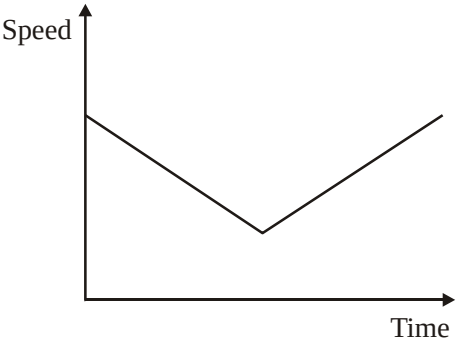
..... (1)

(b)



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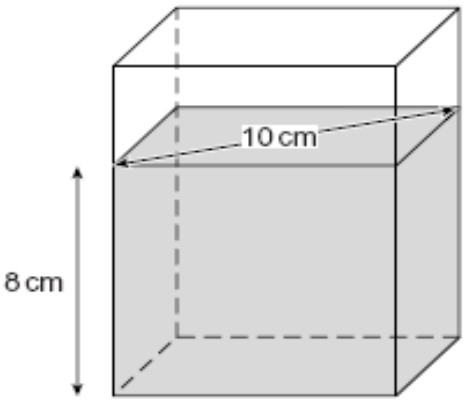
.....(2)

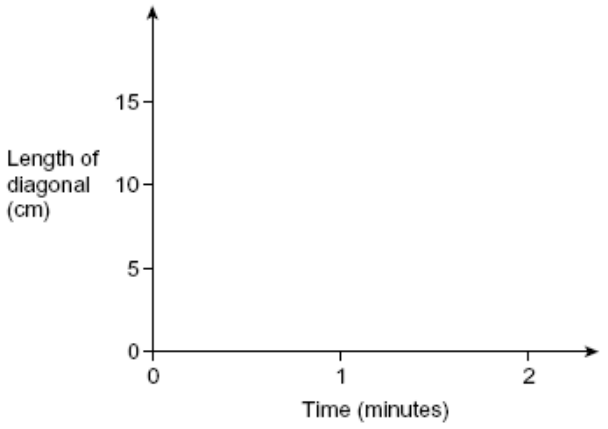
(Total 3 marks)

7. A rectangular tank contains water.
The height of the water is 8 cm.
The length of the diagonal of the surface of the water is 10 cm.
Water is leaking from the tank at a steady rate.

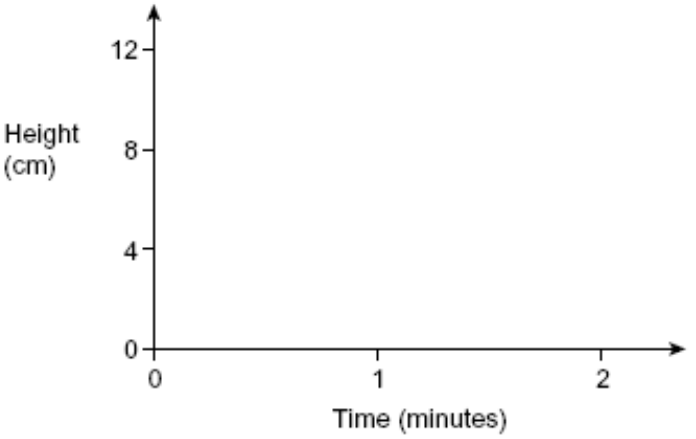
The tank is empty after 2 minutes.



(a) Sketch the graph of the length of the diagonal against the time. **(1 mark)**



(b) Sketch the graph of the height against the time. **(1 marks)**



(Total 2 marks)

Success:	Target: