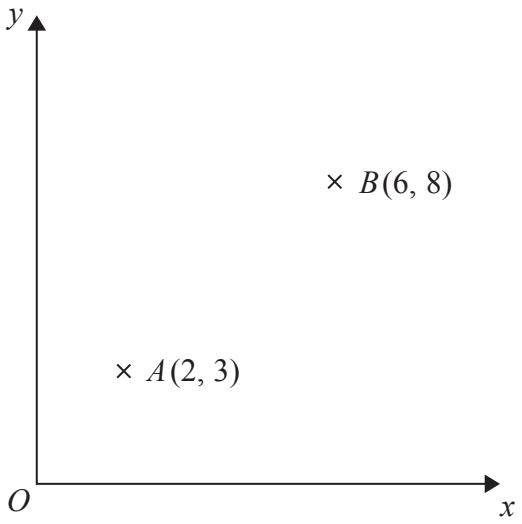
1 The point A has coordinates (2, 3).
The point B has coordinates (6, 8).

M is the midpoint of the line AB.

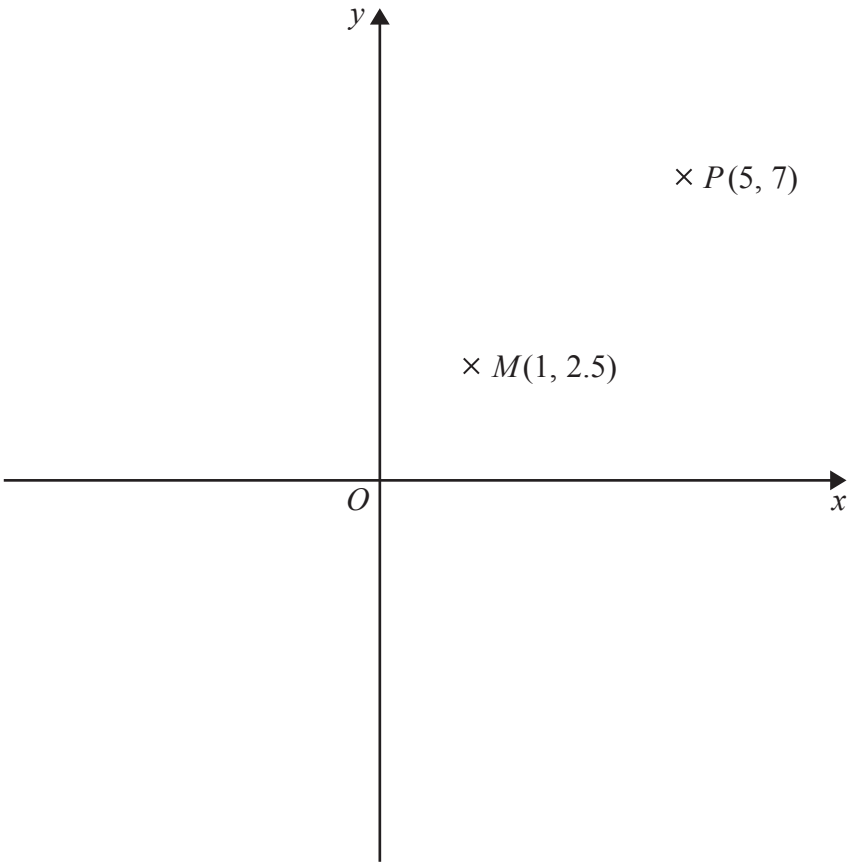
Find the coordinates of M.



.....

(Total for Question 1 is 2 marks)

2



Point P has coordinates (5, 7).
Point M has coordinates (1, 2.5).

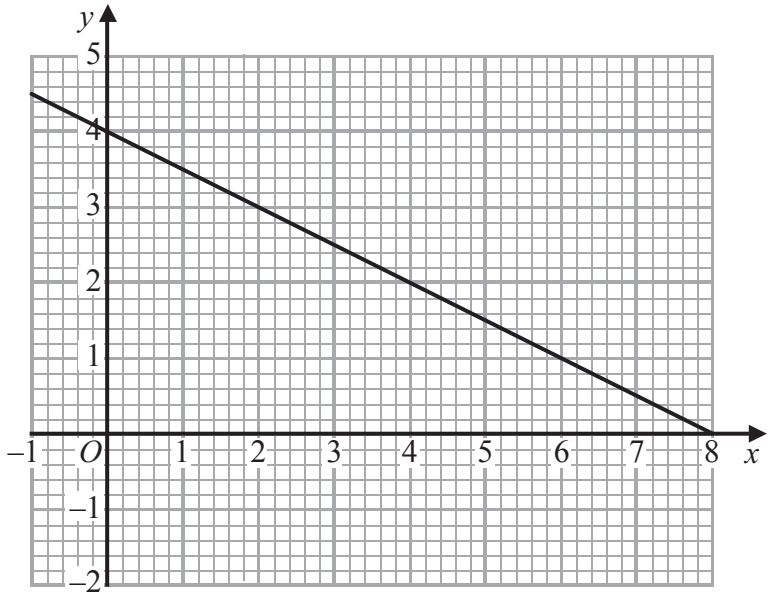
Point M is the midpoint of the line PQ.

Find the coordinates of point Q.

(..... , ...)

(Total for Question 2 is 2 marks)

3



The graph of the straight line $x + 2y = 8$ is shown on the grid.

(a) On the grid, draw the graph of $y = \frac{x}{2} - 1$

(3)

(b) Use the graphs to find estimates for the solution of

$x + 2y = 8$

$y = \frac{x}{2} - 1$

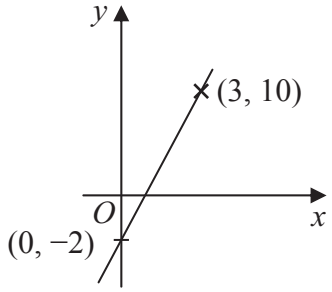
$x =$ ..... $y =$ .....

(1)

(Total 4 marks)

4 A straight line passes through (0, –2) and (3, 10).

Find the equation of the straight line.



.....

(Total for Question 4 is 3 marks)

5 $\mathbf{L}_1$ and $\mathbf{L}_2$ are parallel lines.

The equation of $\mathbf{L}_1$ is $y = 3x + 2$
$\mathbf{L}_2$ passes through the point (3, 4).

Find an equation for $\mathbf{L}_2$.

.....

(Total for Question 5 is 3 marks)

6 A and B are two points.

Point A has coordinates $(-2, 4)$.
Point B has coordinates $(8, 9)$.

C is the midpoint of the line segment AB.

(a) Find the coordinates of C.

(..... , ...)

(2)

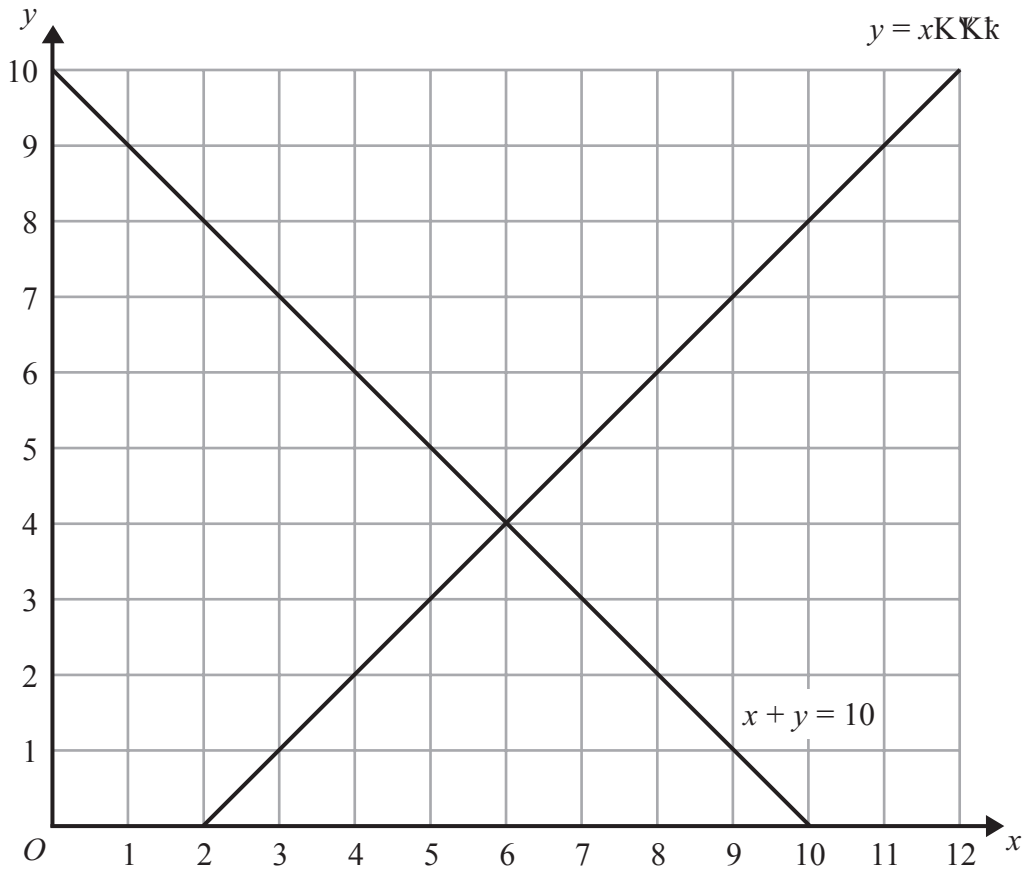
D is the point with coordinates $(100, 56)$.

*(b) Does point D lie on the straight line that passes through A and B?
You must show how you work out your answer.

(3)

(Total for Question 6 is 5 marks)

7 The lines $y = x - 2$ and $x + y = 10$ are drawn on the grid.



On the grid, mark with a cross (×) each of the points with integer coordinates that are in the region defined by

$y > x$
$x + y < 10$
$x > 3$

(Total for Question 7 is 3 marks)

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

The coordinates of A are (2, 5)
The coordinates of B are (4, p)
The coordinates of C are (q, 17)

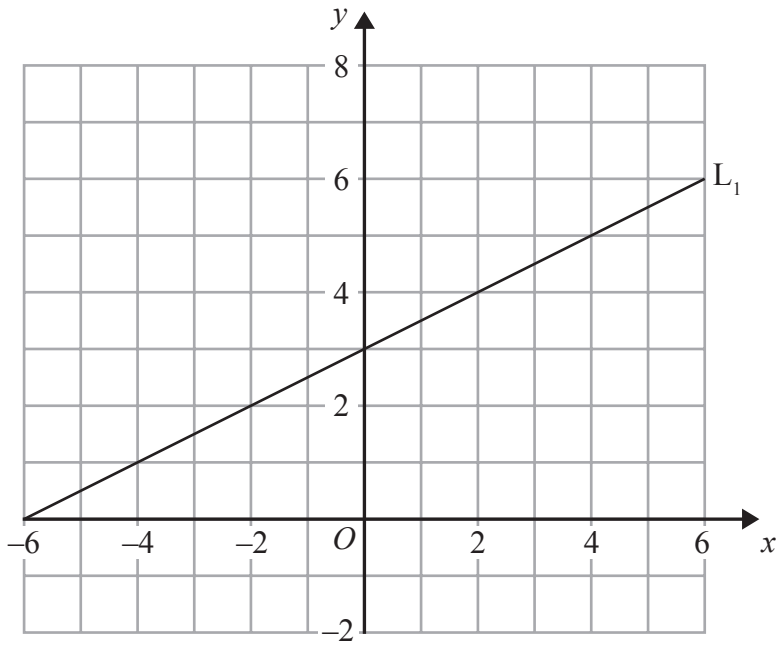
Given that $AC = 4AB$, find the values of p and q.

$p =$ .....

$q =$ .....

(Total for Question 8 is 3 marks)

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



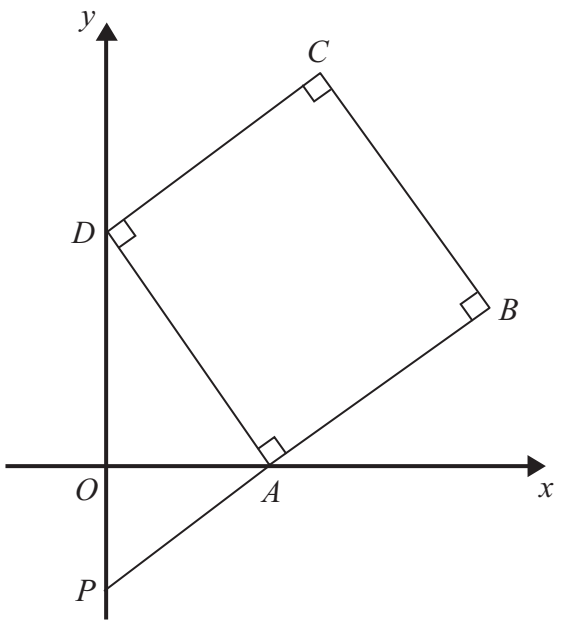
A straight line, L_2, is parallel to the straight line L_1 and passes through the point (0, –5).

Find an equation of the straight line L_2.

.....

(Total for Question 9 is 3 marks)

10



ABCD is a square.
P and *D* are points on the *y*-axis.
A is a point on the *x*-axis.
PAB is a straight line.

The equation of the line that passes through the points *A* and *D* is $y = -2x + 6$

Find the length of *PD*.

.....

(Total for Question 10 is 4 marks)

11 AB is a line segment.

A is the point with coordinates (3, 6, 7).
The midpoint of AB has coordinates (–2, 2, 5).

Find the coordinates of B.

.....

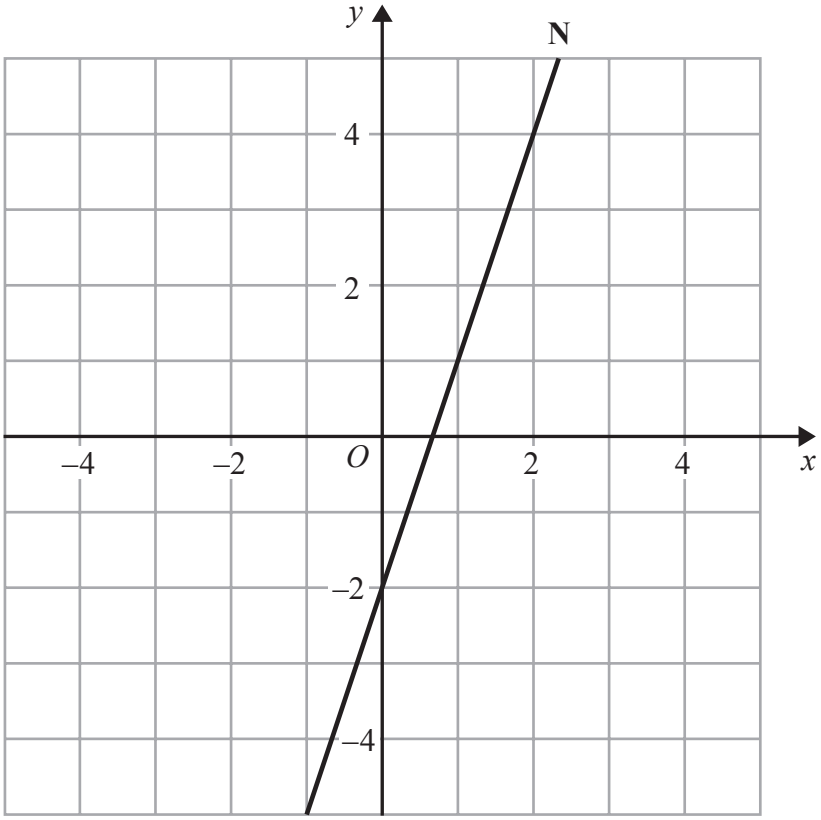
(Total for Question 11 is 2 marks)

12 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 12 is 4 marks)

13 The line **N** is drawn below.



Find an equation of the line perpendicular to line **N** that passes through the point (0, 1).

.....

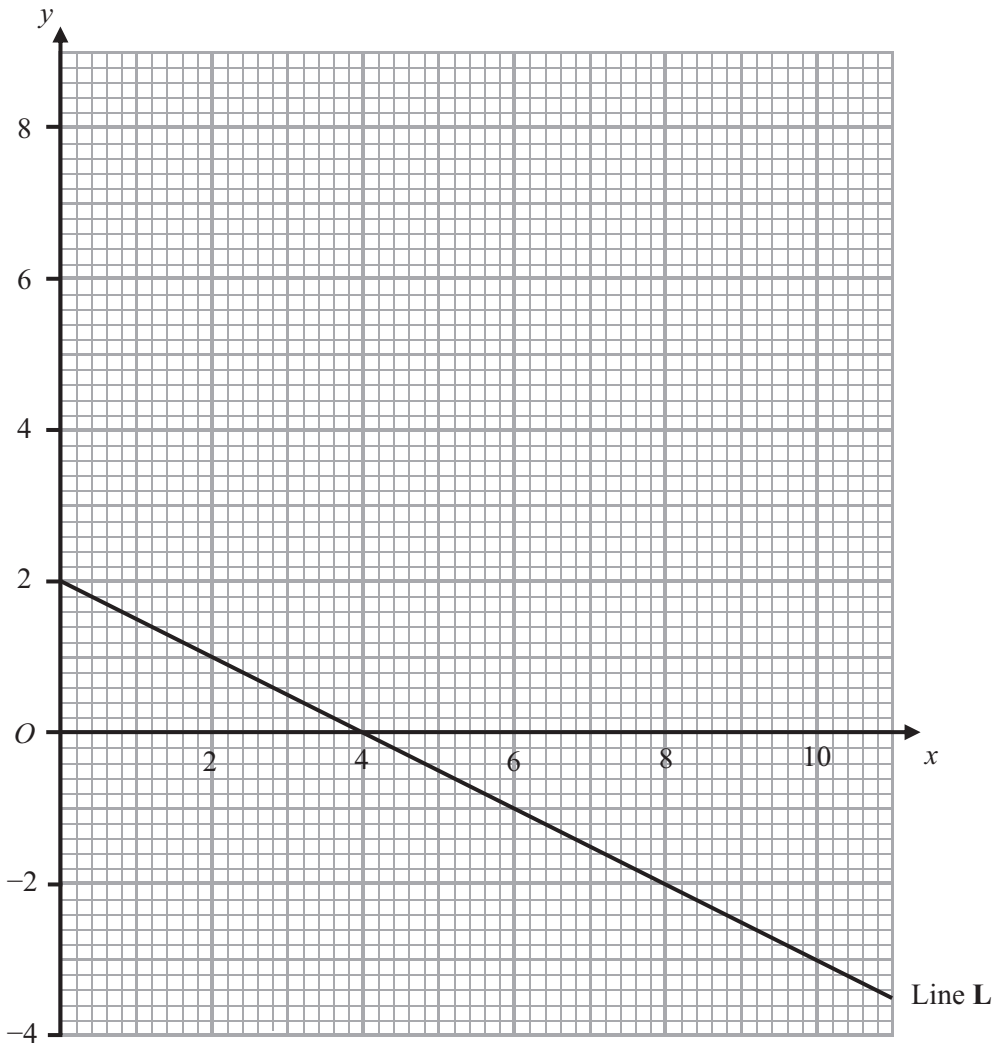
(Total for Question 13 is 3 marks)

14 **A** and **B** are straight lines.
Line **A** has equation $2y = 3x + 8$
Line **B** goes through the points $(-1, 2)$ and $(2, 8)$

Do lines **A** and **B** intersect?
You must show all your working.

(Total for Question 14 is 3 marks)

15



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

(a) Work out the gradient of Line **L**.

.....

(2)

Another line, Line **M**, is parallel to Line **L** and passes through the point (6, 2).

(b) Find an equation for Line **M**.

.....

(2)

(Total 4 marks)