

Name: _____

GCSE (1 – 9)

The Equation of a Line

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

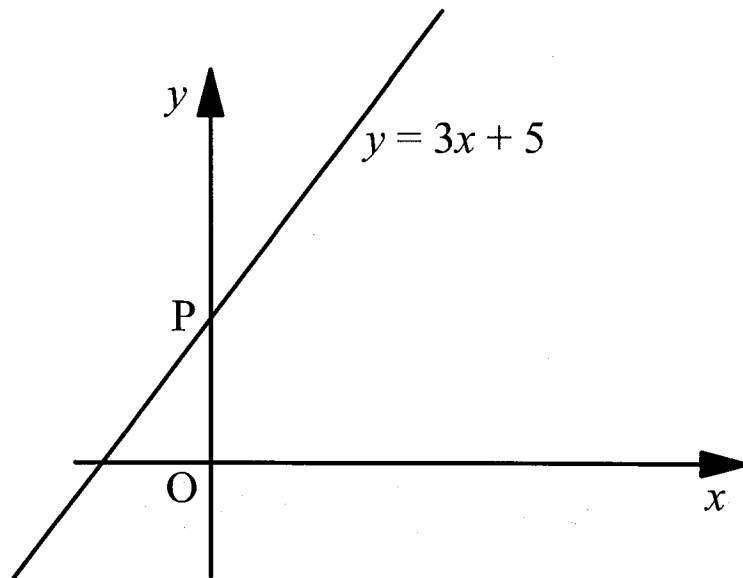
Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

1



(a) The line $y = 3x + 5$ crosses the y axis at P .
What is the value of y at P ?

5

(1)

(b) Write down the equation of another line which is parallel to $y = 3x + 5$

Any other line with
 $m = 3$

$y = 3x + 1$

(1)

(Total for Question 1 is 2 marks)

2 A line passes through the point $(0, 4)$.
The gradient of this line is 2.
Write down the equation of this line.

$y = 2x + 4$

(Total for Question 2 is 2 marks)

3 A line passes through the point $(0, -5)$.
The gradient of this line is 3.
Write down the equation of this line.

$y = 3x - 5$

(Total for Question 3 is 2 marks)

4 A straight line has equation $y = 5 - 3x$

(a) Write down the gradient of the line.

.....
- 3

(1)

(b) Write down the coordinates of the point where the line crosses the y axis.

.....
(0, 5)

(1)

(Total for Question 4 is 2 marks)

5 A straight line has equation $y = 3x - 2$

(a) Write down the gradient of the line.

.....
3

(1)

(b) Write down the coordinates of the point where the line crosses the y axis.

.....
(0, -2)

(1)

(Total for Question 5 is 2 marks)

6 A straight line has equation $y = 2 - x$

(a) Write down the gradient of the line.

.....
- 1

(1)

(b) Write down the coordinates of the point where the line crosses the y axis.

.....
(0, 2)

(1)

(Total for Question 6 is 2 marks)

7 A straight line has equation $y = 4x + 3$

(a) Write down the gradient of the line.

.....
4

(1)

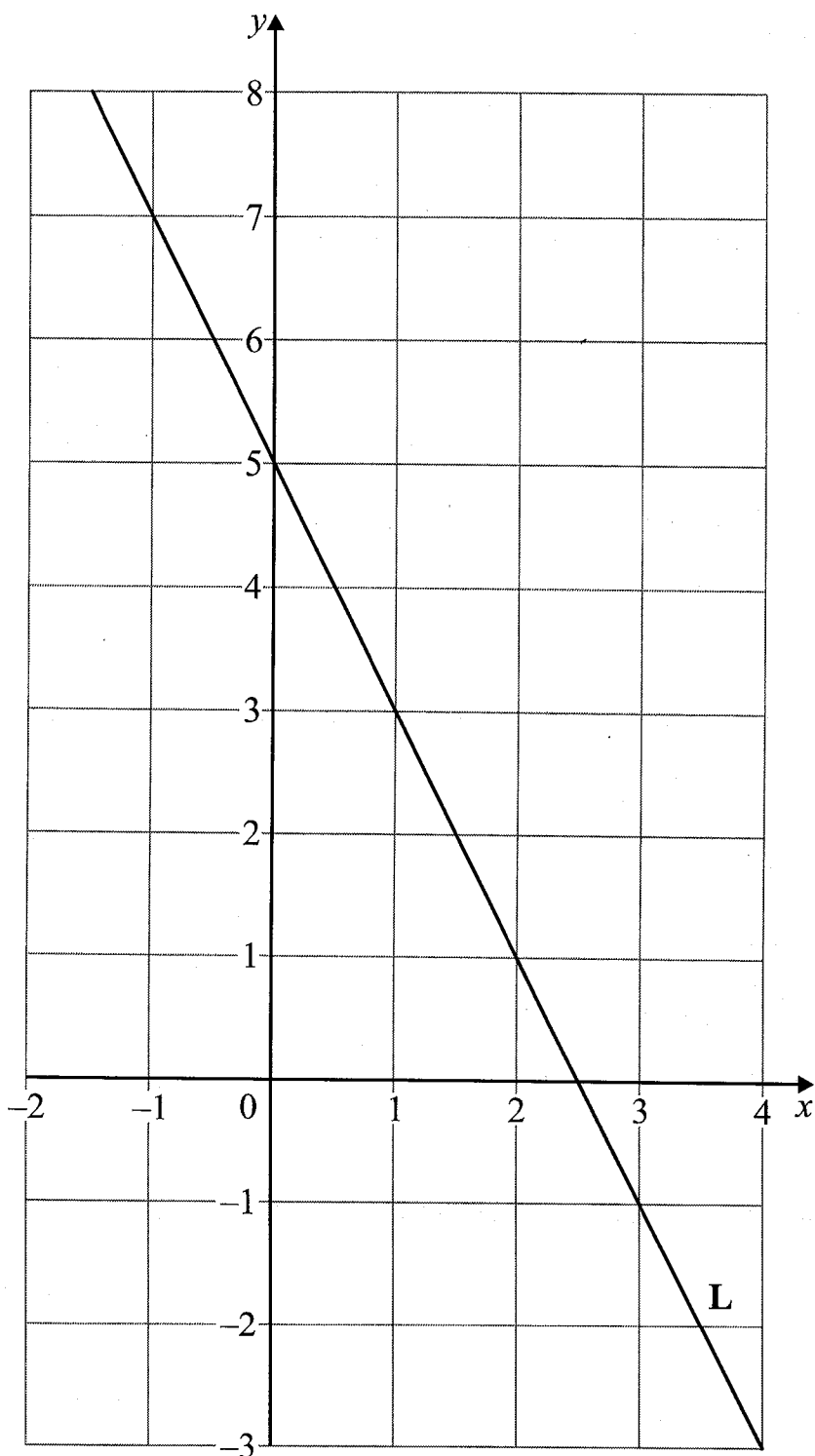
(b) Write down the coordinates of the point where the line crosses the y axis.

.....
(0, 3)

(1)

(Total for Question 7 is 2 marks)

8



Find the equation of line L.

$$y = -2x + 5$$

(Total for Question 8 is 3 marks)

9 A straight line has equation $2y - 10x = 8$

(a) Work out the gradient of this line.

$$y - 5x = 8$$
$$y = 5x + 8$$

5

(b) Write down the equation of a line parallel to this line.

(2)

Any other line with $m = 5$ $y = 5x + 1$

(1)

(Total for Question 9 is 3 marks)

10 A straight line has equation $4y - 5x = 2$

(a) Work out the gradient of this line.

$$4y = 5x + 2$$
$$y = \frac{5}{4}x + \frac{1}{2}$$

$\frac{5}{4}$

(b) Write down the equation of a line parallel to this line.

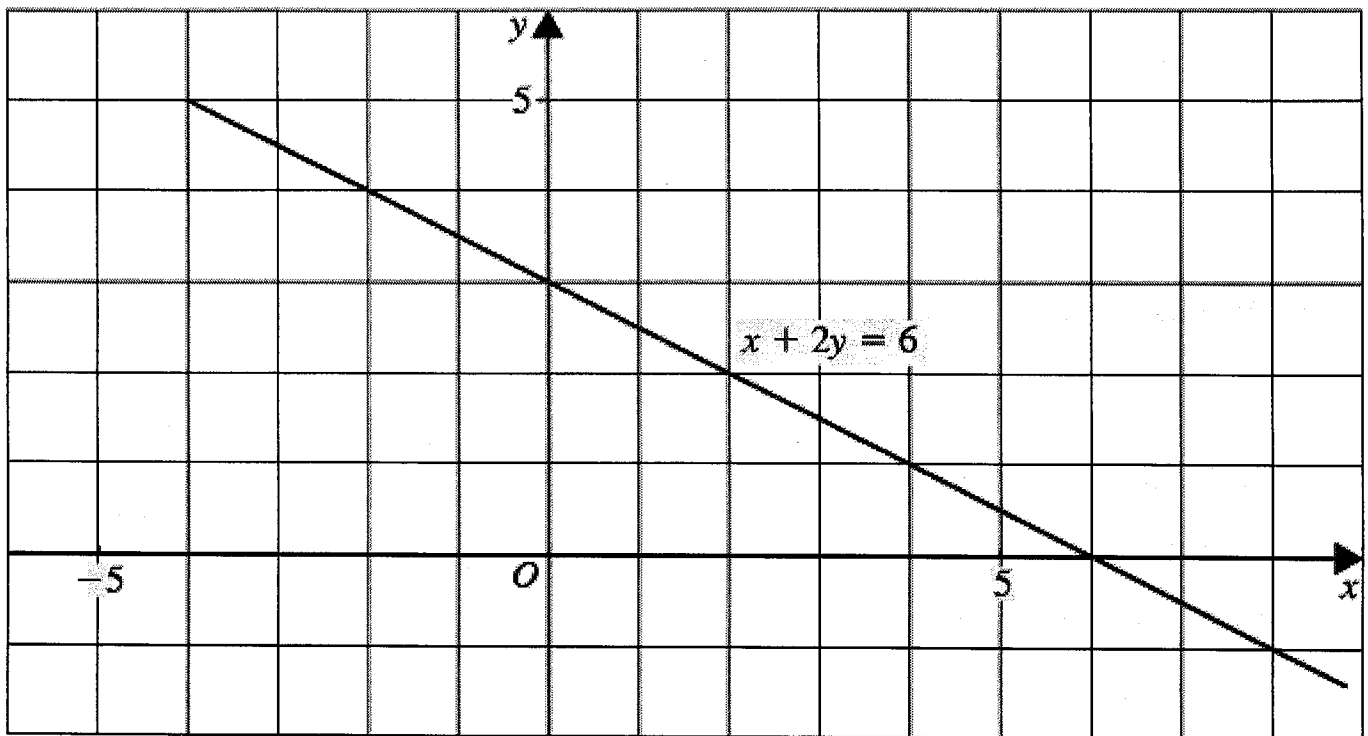
(2)

Any other line with $m = \frac{5}{4}$ $y = \frac{5}{4}x + 1$

(1)

(Total for Question 10 is 3 marks)

- 11 The line with equation $x + 2y = 6$ has been drawn on the grid.



- (a) Rearrange the equation $x + 2y = 6$ to make y the subject.

$$2y = -x + 6$$

$$y = -\frac{1}{2}x + 3$$

$$\underline{y = -\frac{1}{2}x + 3} \quad (2)$$

- (b) Write down the gradient of the line with equation $x + 2y = 6$

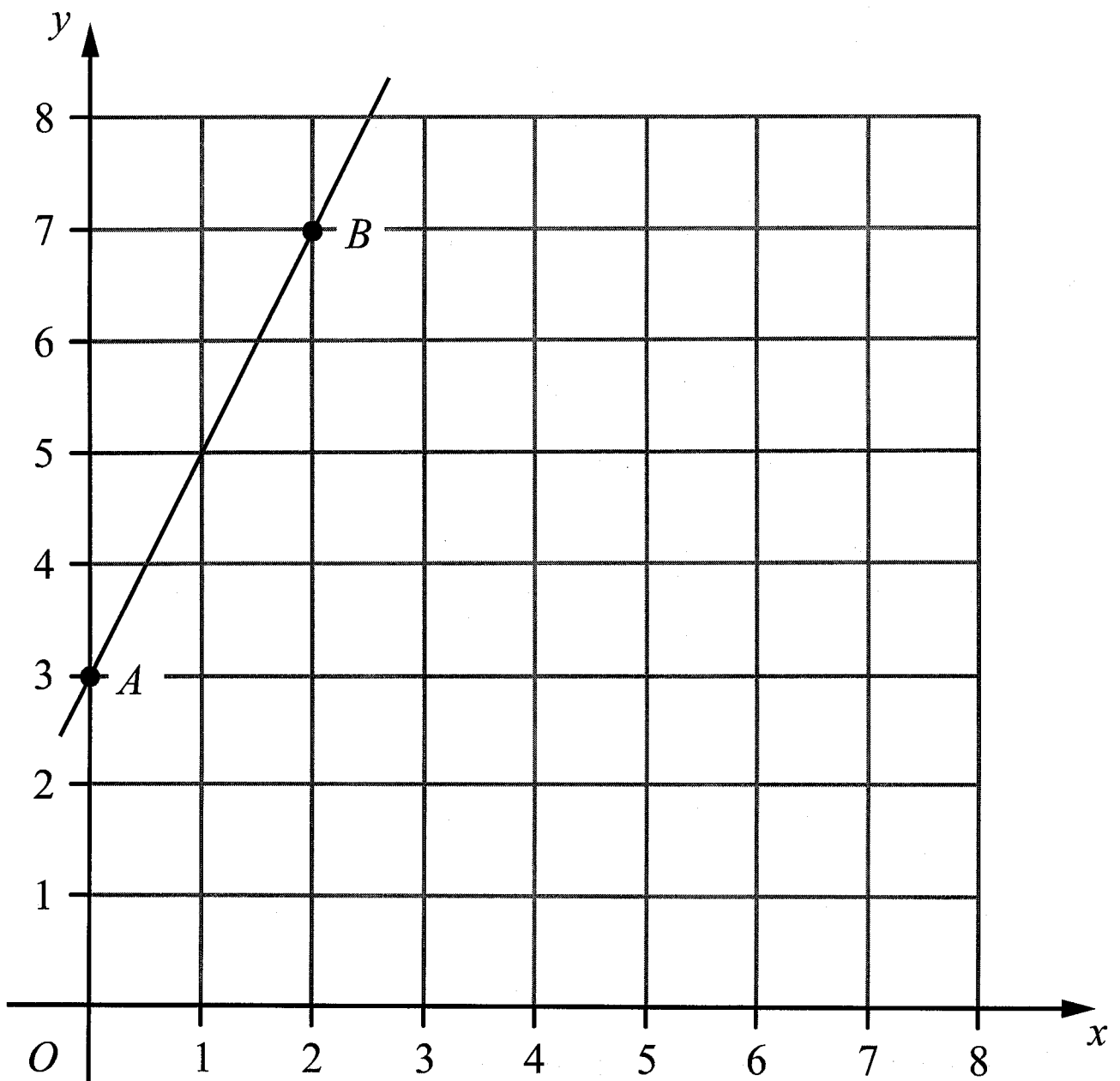
$$\underline{-\frac{1}{2}} \quad (2)$$

- (c) Write down the equation of the line which is parallel to the line with equation $x + 2y = 6$ and passes through the point with coordinates $(0, 7)$.

$$\underline{y = -\frac{1}{2}x + 7} \quad (1)$$

(Total for Question 11 is 5 marks)

12

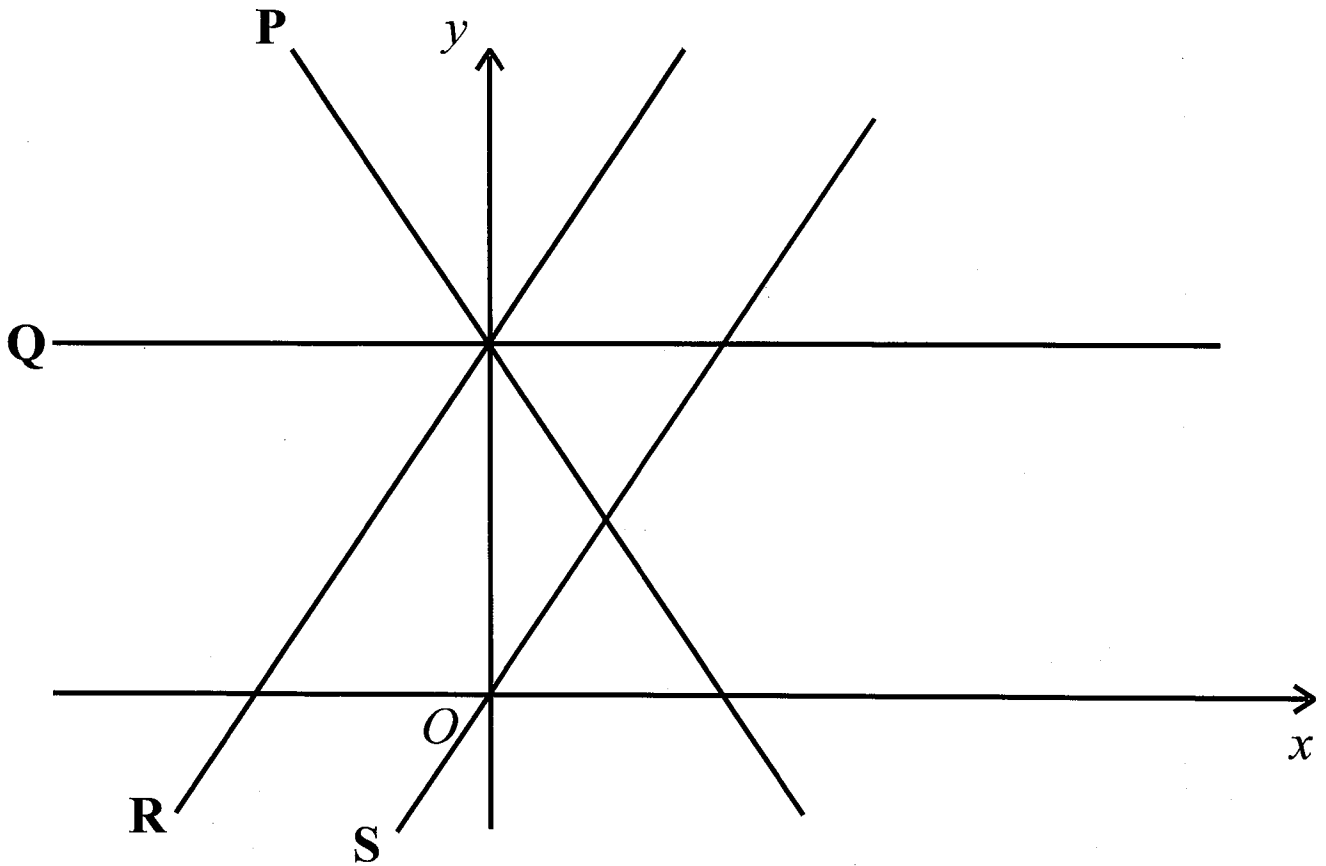


Find the equation of the line that passes through A and B .

$$y = 2x + 3$$

(Total for Question 12 is 3 marks)

13



The diagram shows 4 straight lines, labelled P, Q, R and S.
The equations of the straight lines are:

- A: $y = 2x$
 B: $y = 3 - 2x$
 C: $y = 2x + 3$
 D: $y = 3$

Match each straight line, P, Q, R and S to its equation.
Complete the table.

Equation	A	B	C	D
Straight line	S R	P	R	Q

(Total for Question 13 is 2 marks)