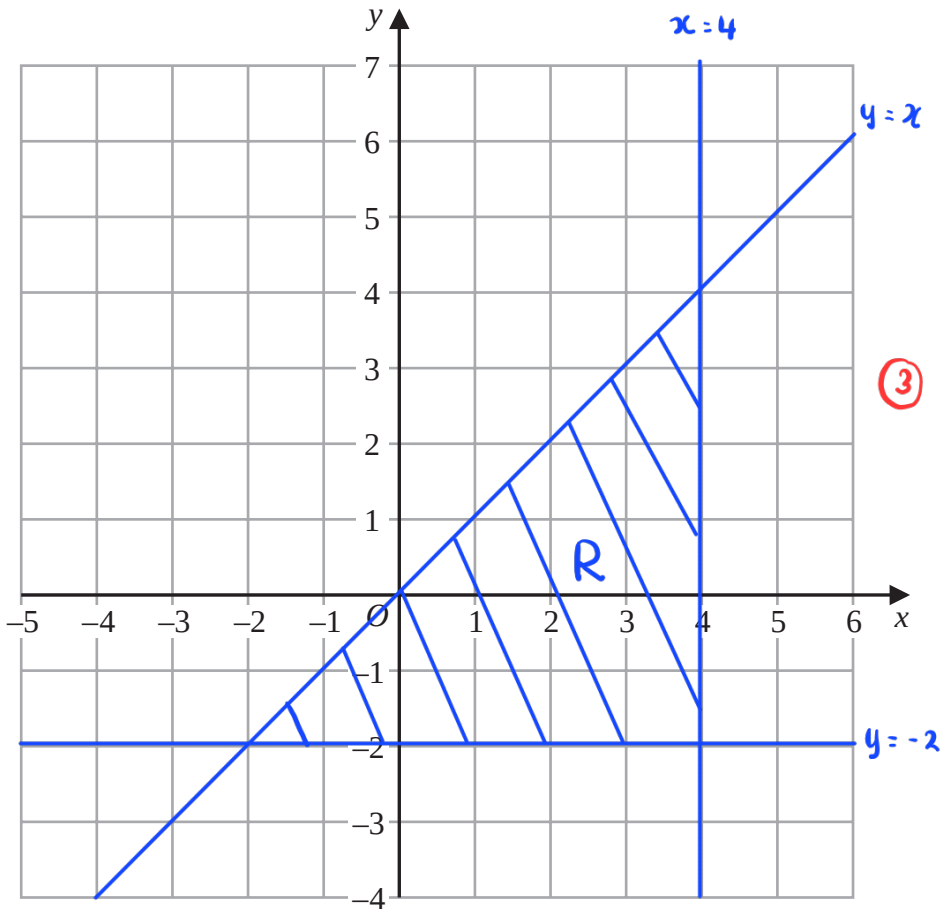
1 Show, by shading on the grid, the region that satisfies all three of the inequalities

$x \leqslant 4$ and $y \geqslant -2$ and $y \leqslant x$

Label the region **R**.



(Total for Question 1 is 3 marks)

2 (a) Write down the integer values of x that satisfy the inequality $-2 < x \leqslant 4$

$-1, 0, 1, 2, 3, 4$ (2)

(2)

The region **R**, shown shaded in the diagram, is bounded by three straight lines.

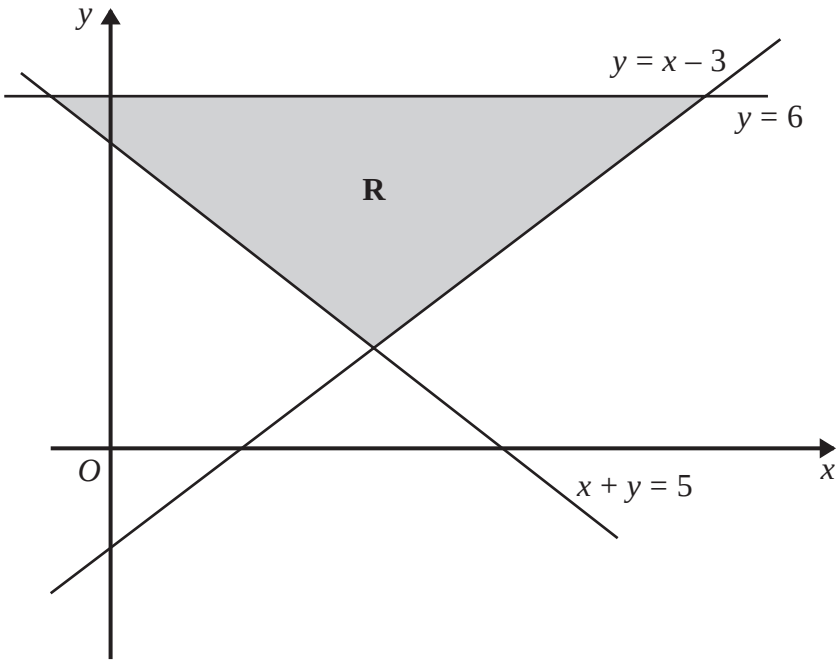


Diagram **NOT** accurately drawn

(b) Write down the three inequalities that define the region **R**.

$y \leq 6$

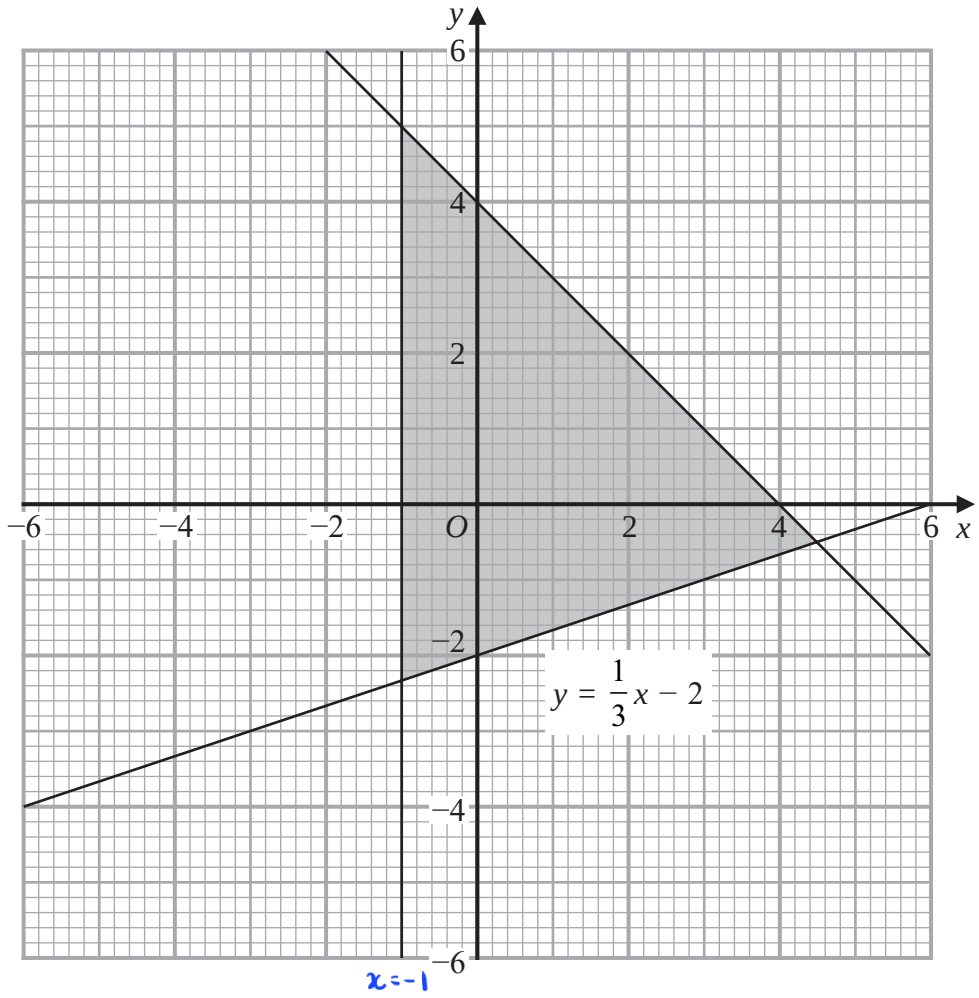
$x + y \geq 5$ (2)

$y \geq x - 3$

(2)

(Total for Question 2 is 4 marks)

3 The shaded region in the diagram is bounded by three lines.
The equation of one of the lines is given.



Write down the three inequalities that define the shaded region.

$y \geqslant \frac{1}{3}x - 2$

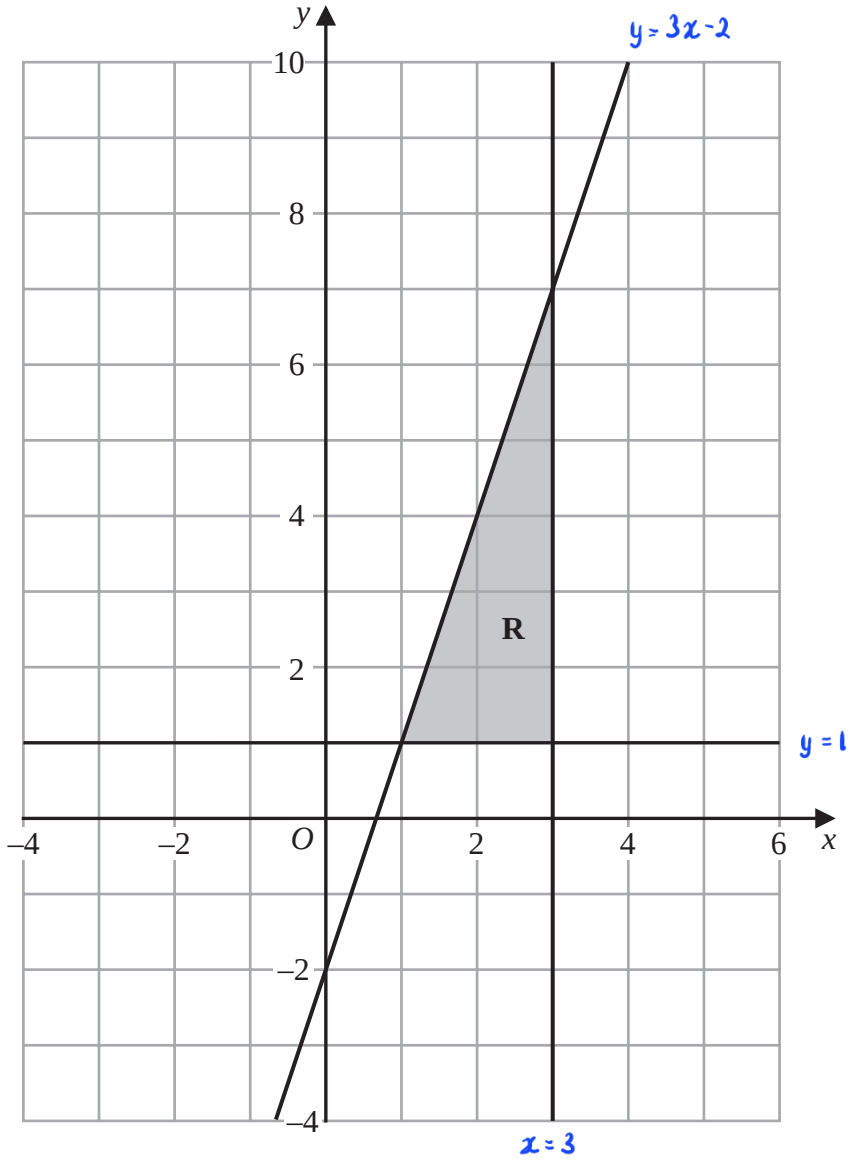
$x \geqslant -1$

$y \leqslant -x + 4$ (3)

(Total for Question 3 is 3 marks)

4 The shaded region **R**, shown in the diagram below, is bounded by the straight line with equation $y = 3x - 2$ and by two other straight lines.

Write down the three inequalities that define region **R**.



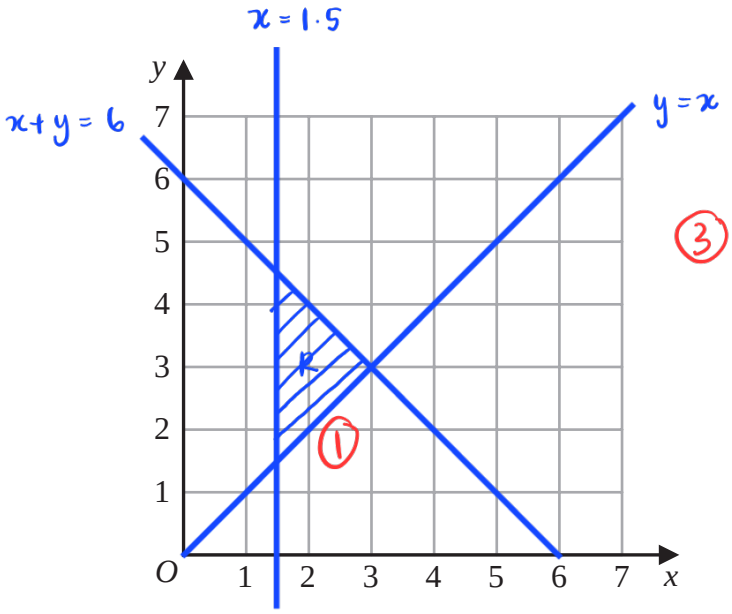
$x \leqslant 3$ (1)

$y \geqslant 1$ (1)

$y \leqslant 3x - 2$ (1)

(Total for Question 4 is 3 marks)

5



(a) On the grid, draw and **label** the straight line with equation

(i) $x = 1.5$

(ii) $y = x$

(iii) $x + y = 6$

(3)

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities

$x \geqslant 1.5$ $y \geqslant x$ $x + y \leqslant 6$

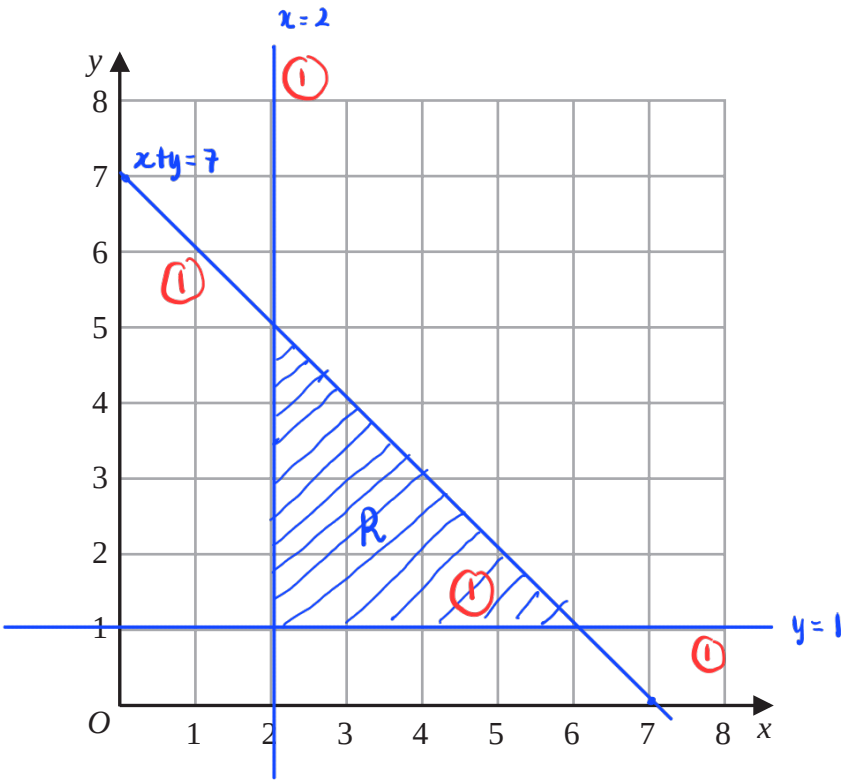
Label the region **R**.

(1)

(Total for Question 5 is 4 marks)

6 (a) On the grid, draw and label with its equation the straight line with equation

(i) $y = 1$ (ii) $x = 2$ (iii) $x + y = 7$



(3)

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities

$y \geqslant 1$ $x \geqslant 2$ $x + y \leqslant 7$

Label the region **R**.

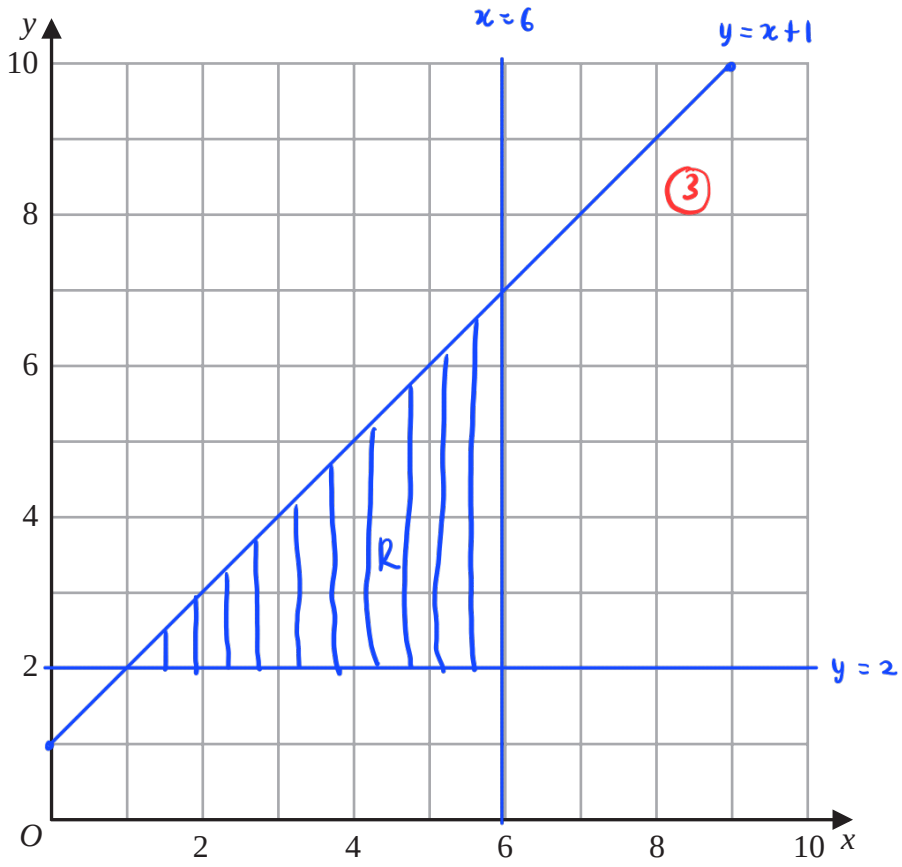
(1)

(Total for Question 6 is 4 marks)

7 (b) Show, by shading on the grid, the region defined by **all three** of the inequalities

$x \leqslant 6$ $y \geqslant 2$ $y \leqslant x + 1$

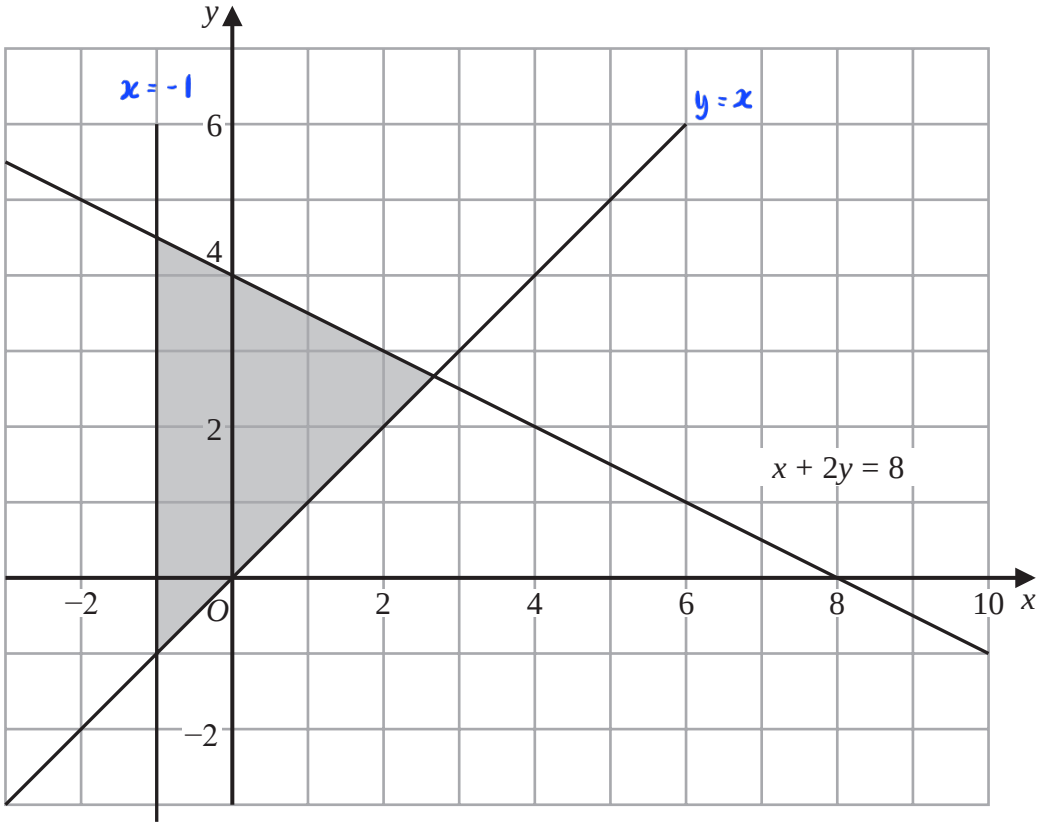
Label the region **R**



(3)

(Total for Question 7 is 3 marks)

8 The shaded region in the diagram is bounded by three lines.
The equation of one of the lines is given.



Write down three inequalities that define the shaded region.

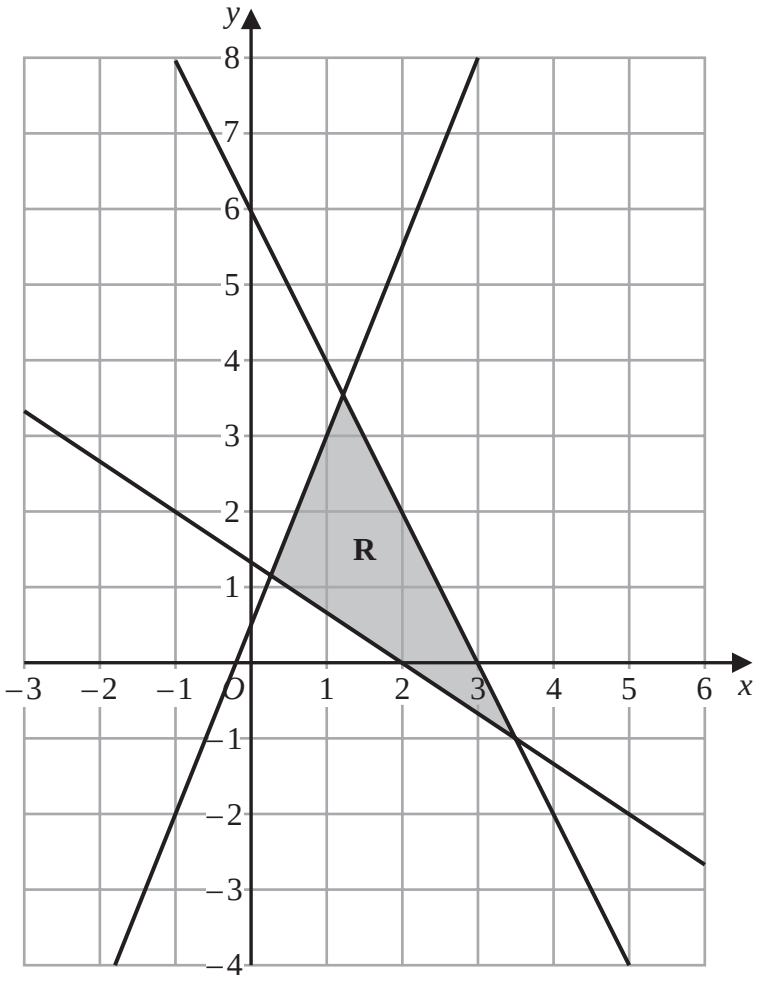
$x \geq -1$ (1)

$y \geq x$ (1)

$x + 2y \leq 8$ (1)

(Total for Question 8 is 3 marks)

9



The region **R**, shown shaded in the diagram, is bounded by the straight lines with equations

$2x + y = 6$

$2y = 5x + 1$

$3y + 2x = 4$

Write down the three inequalities that define **R**

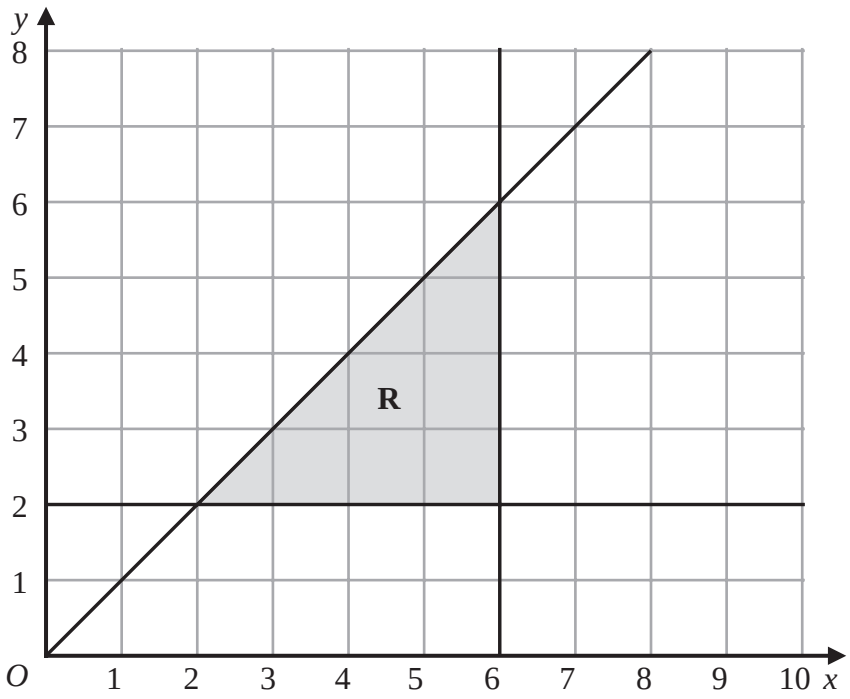
$2x + y \leq 6$

$2y \leq 5x + 1$ (3)

$3y + 2x \geqslant 4$

(Total for Question 9 is 3 marks)

10



(b) Write down the three inequalities that represent the shaded region **R**

$x \leqslant 6$ (3)

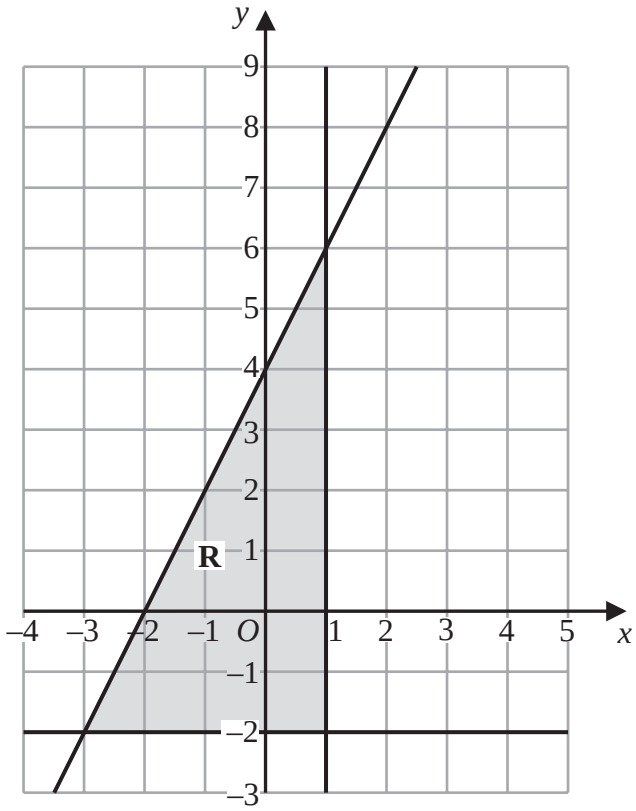
$y \geqslant 2$

$y \leqslant x$

(3)

(Total for Question 10 is 3 marks)

11



The region **R**, shown shaded in the diagram, is bounded by three straight lines.

Find the inequalities that define **R**

Take point (1, 6) : $6 = m(1) + 4$

$m = 2$ (1)

$y = 2x + 4$

$x \leqslant 1$ (1)

$y \geqslant -2$ (1)

$y \leqslant 2x + 4$ (1)

(Total for Question 11 is 4 marks)