Inequalities and Regions

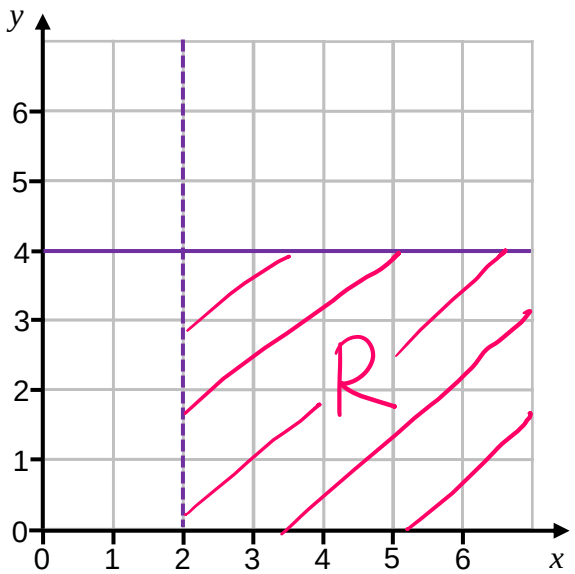
SCAN ME

REVISE THIS TOPIC

1 On the grid, identify the region represented by

$x > 2$ $y \leq 4$

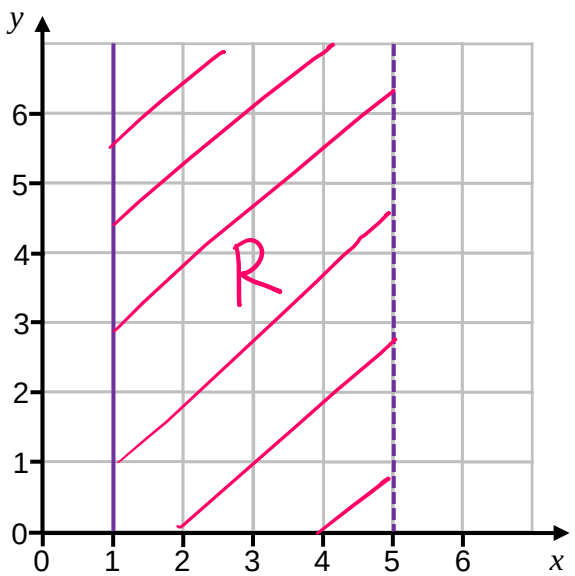
Label the region R. **[2 marks]**



2 On the grid, identify the region represented by

$1 \leq x < 5$

Label the region R. **[2 marks]**



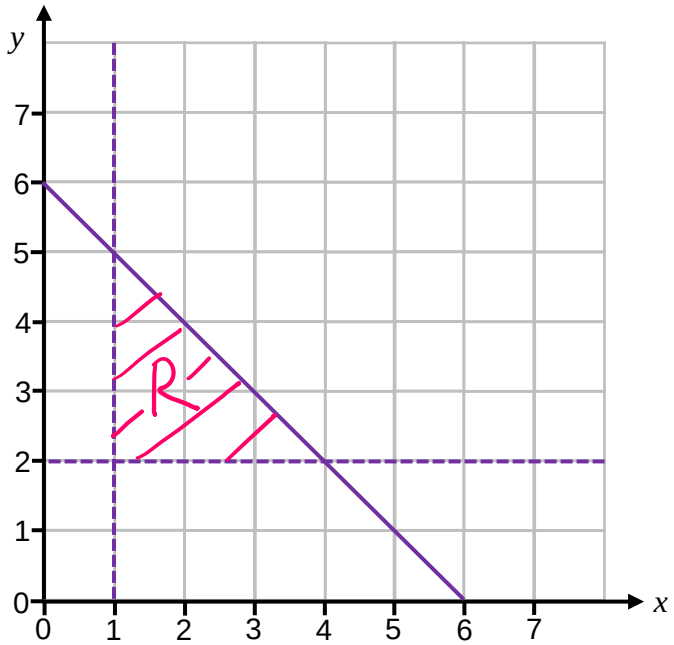
4

3 On the grid, identify the region represented by

$x > 1$ $y > 2$ $x + y \leq 6$

Label the region R.

[3 marks]

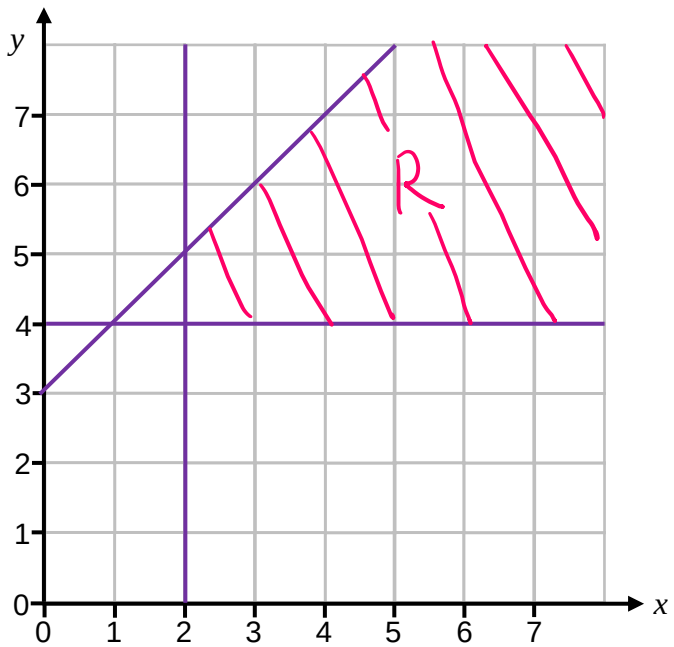


4 On the grid, identify the region represented by

$x \geq 2$ $y \geq 4$ $y \leq x + 3$

Label the region R.

[3 marks]

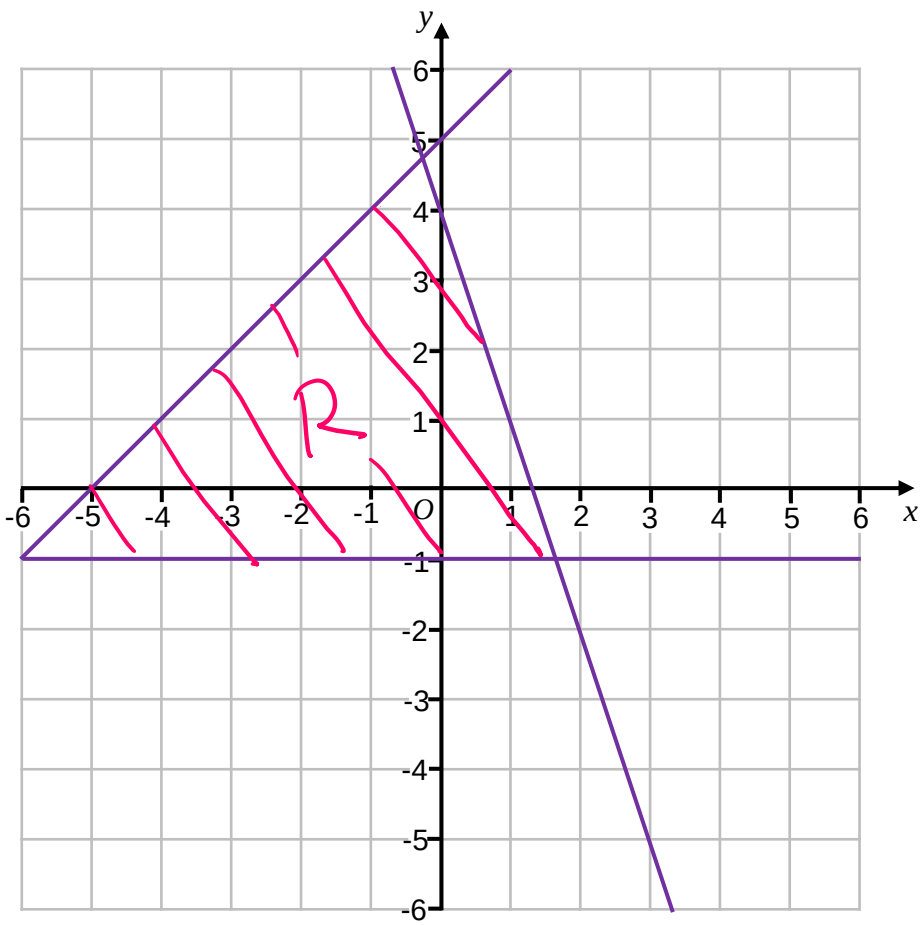


5 On the grid, identify the region represented by

$y \geq -1$ $y \leq x + 5$ $y \leq 4 - 3x$

Label the region R.

[3 marks]



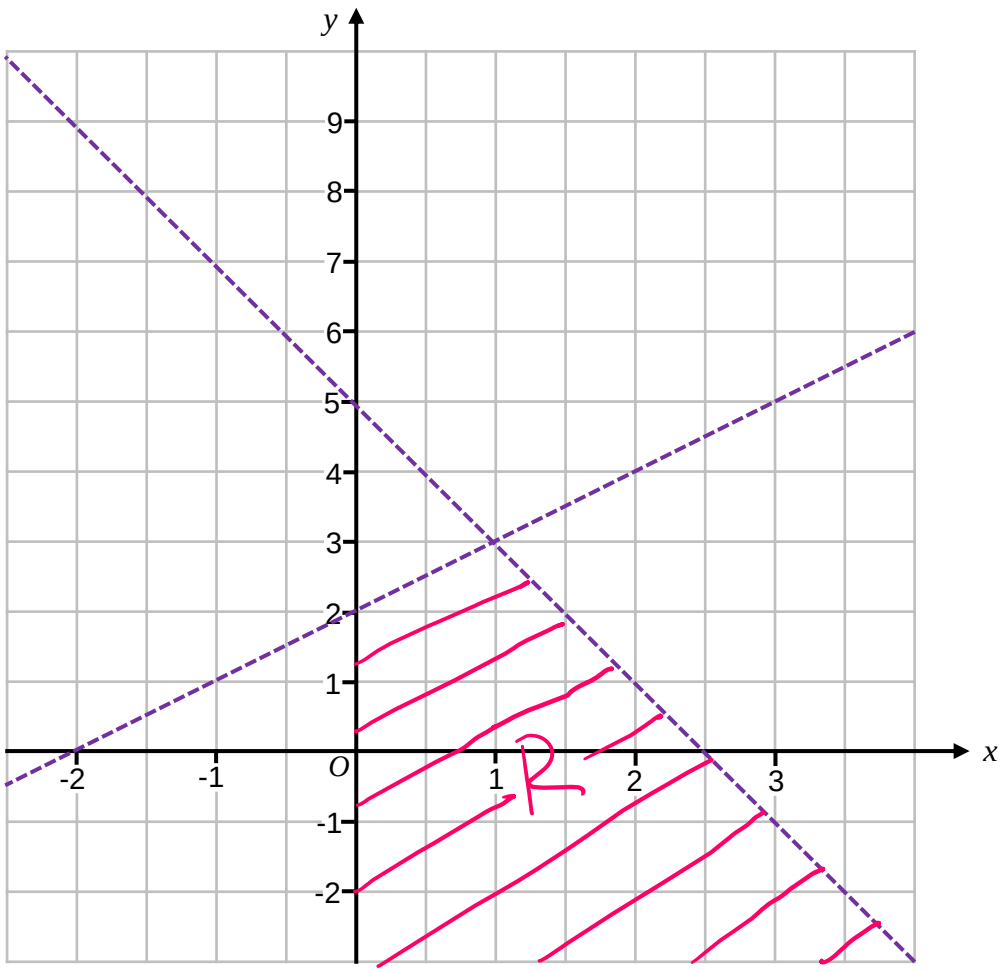
9

6 On the grid, identify the region represented by

$x \geq 0$ $y < x + 2$ $y < 5 - 2x$

Label the region R.

[3 marks]

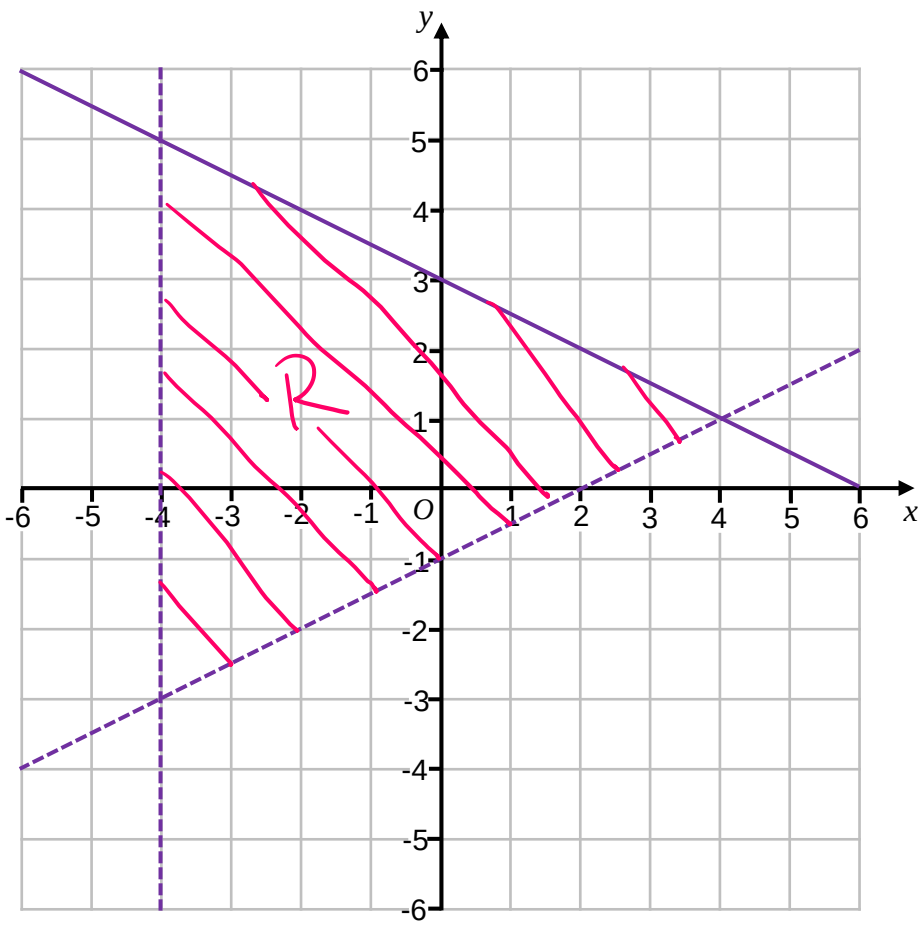


7 On the grid, identify the region represented by

$x > -4$ $\quad y > \frac{1}{2}x - 1$ $\quad x + 2y \leq 6$

Label the region R.

[3 marks]



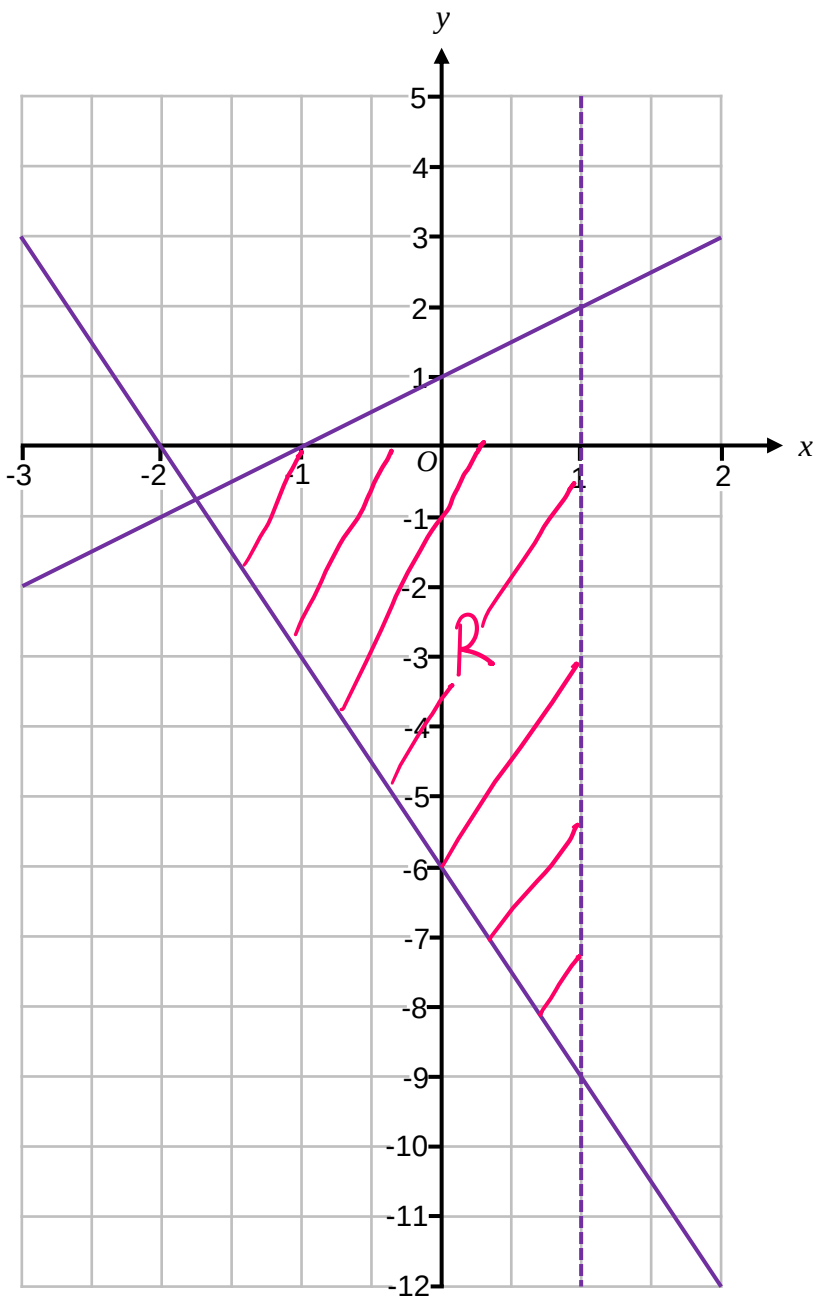
6

8 On the grid, identify the region represented by

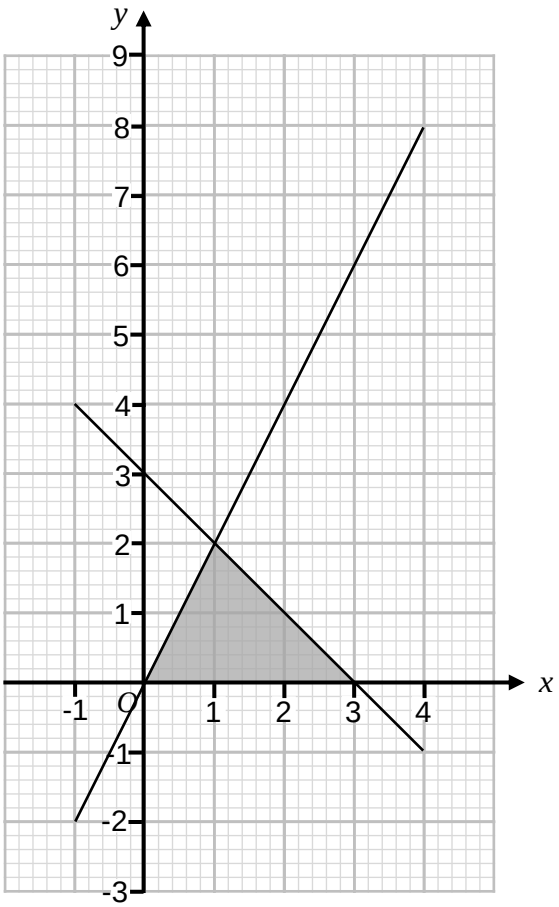
$x < 1$ $y \leq 0$ $y \leq x + 1$ $3x + y \geq -6$

Label the region R.

[4 marks]



9 The shaded region shown on the grid is bounded by three straight lines.



Write down the three inequalities that define the region. **[3 marks]**

First inequality $y \geqslant 0$

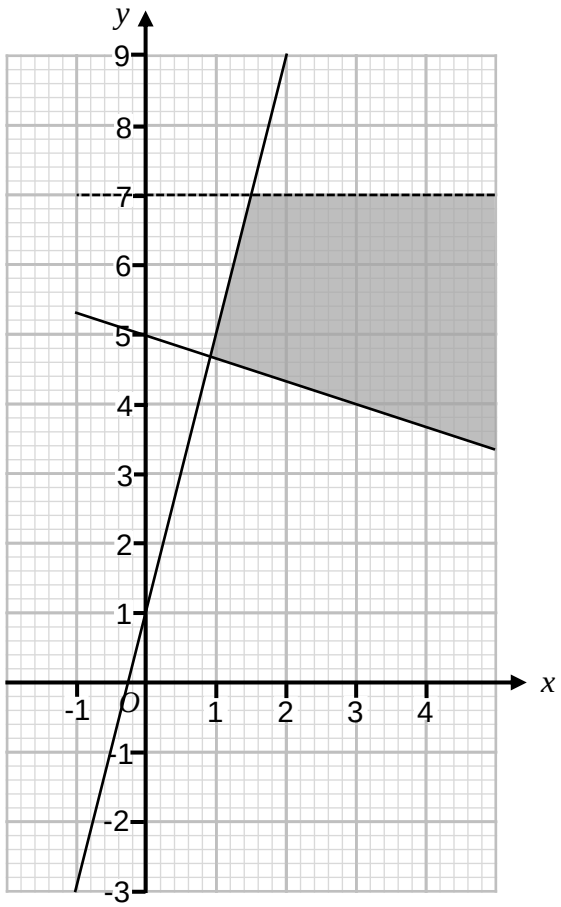
Second inequality $y \leqslant 2x$

Third inequality $y \leqslant 3 - x$

7

Turn over ►

10 The shaded region shown on the grid is bounded by three straight lines.



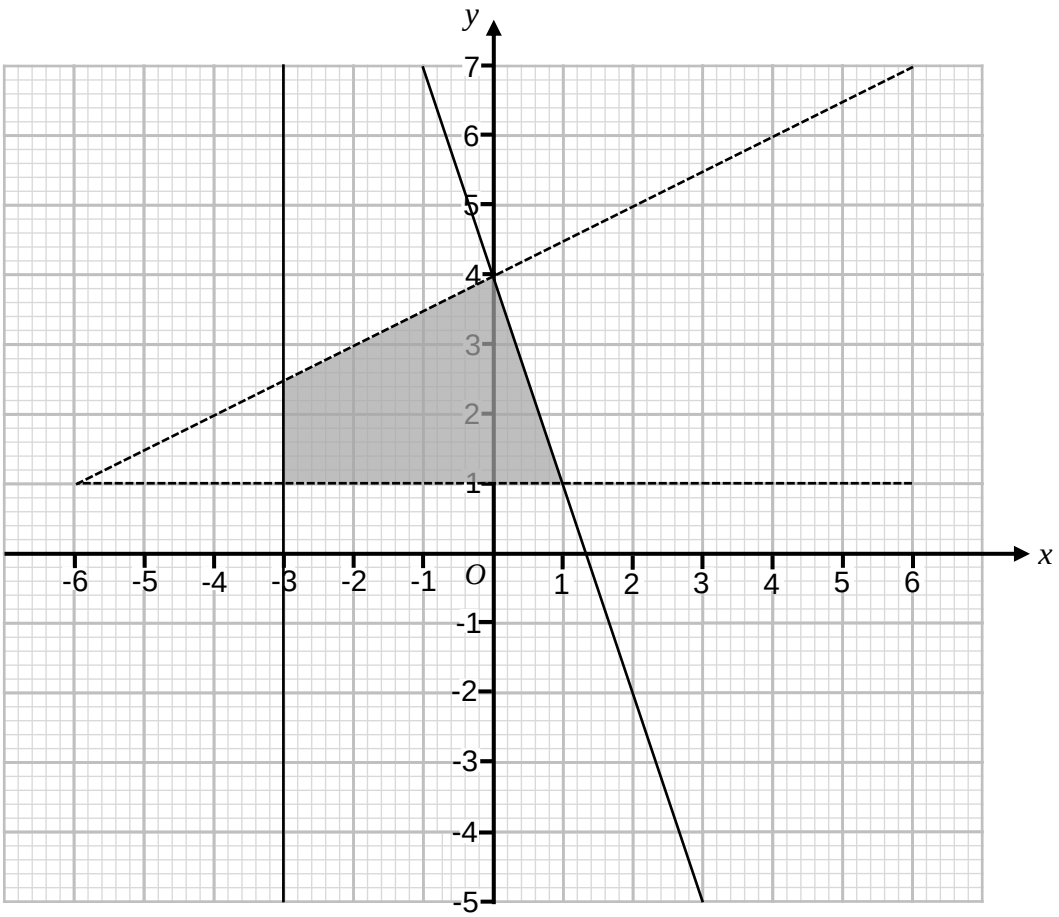
Write down the three inequalities that define the region. **[3 marks]**

First inequality $y < 7$

Second inequality $y \leqslant 4x + 1$

Third inequality $y \geqslant 5 - \frac{1}{3}x$

11 The shaded region shown on the grid is bounded by four straight lines.



Write down the four inequalities that define the region. **[4 marks]**

First inequality $x \geqslant -3$

Second inequality $y > 1$

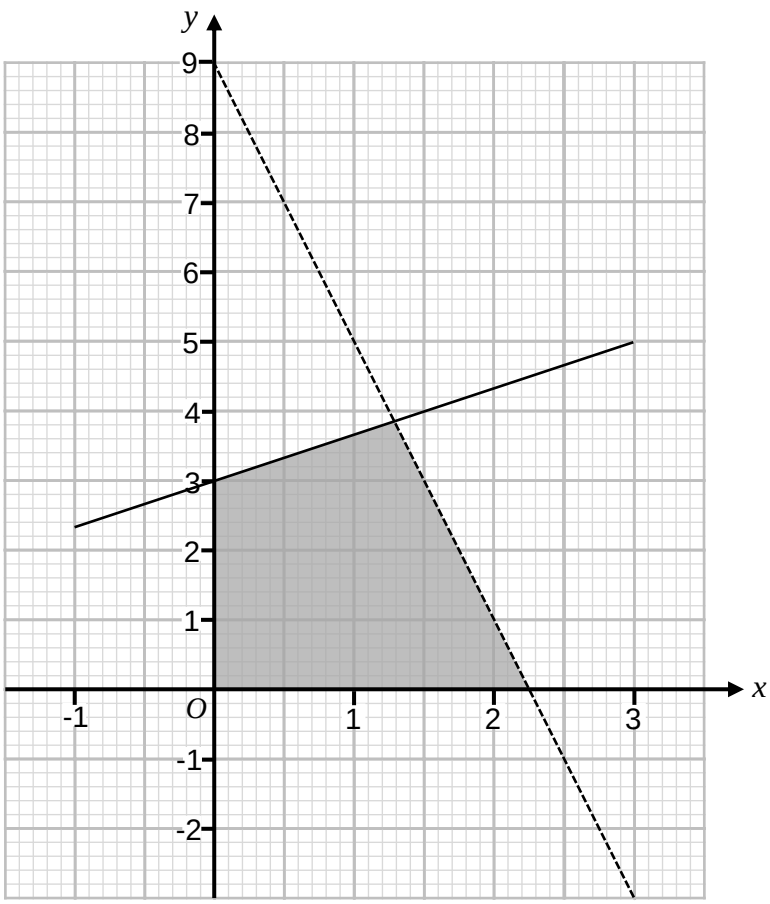
Third inequality $y < \frac{1}{2}x + 4$

Fourth inequality $y \leqslant 4 - 3x$

7

Turn over ►

12 The shaded region shown on the grid is bounded by four straight lines.



Write down the four inequalities that define the region. **[4 marks]**

First inequality $x \geqslant 0$

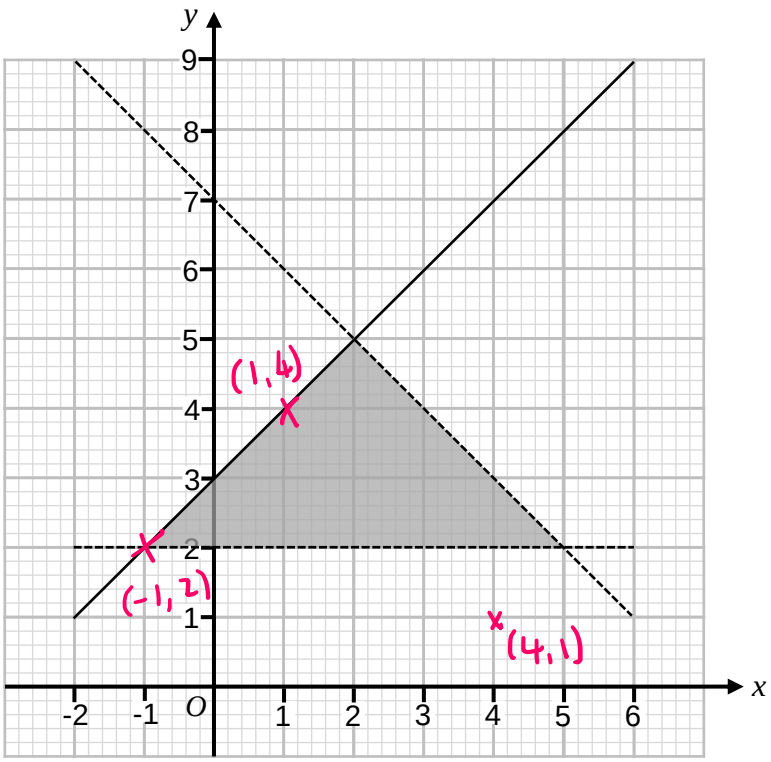
Second inequality $y \geqslant 0$

Third inequality $y \leqslant \frac{2}{3}x + 3$

Fourth inequality $y < 9 - 4x$

13 The diagram below shows the region that satisfies the inequalities

$y > 2$ $y \leq x + 3$ $x + y < 7$



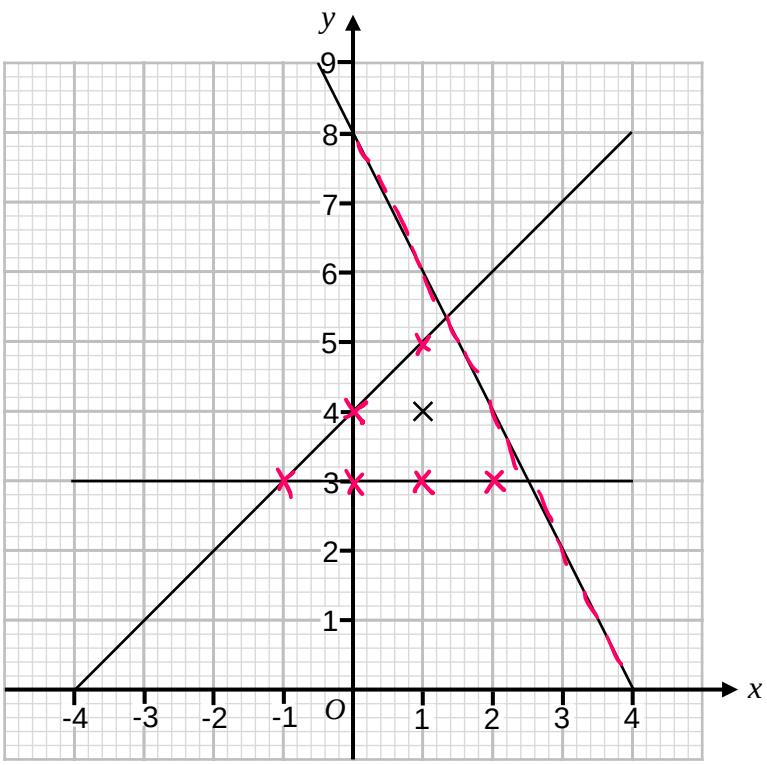
Tick the correct box for each statement below. **[3 marks]**

	True	False	Not possible to tell
The point (4, 1) satisfies all three of the inequalities	☐	☑	☐
The point (1, 4) satisfies all three of the inequalities	☑	☐	☐
The point (-1, 2) satisfies all three of the inequalities	☐	☑	☐

7

14 The diagram below shows the lines with equations

$y = 3$ $y = x + 4$ $2x + y = 8$



x and y are **integers.**

Mark on with a cross (×) each of the points that satisfy all three inequalities

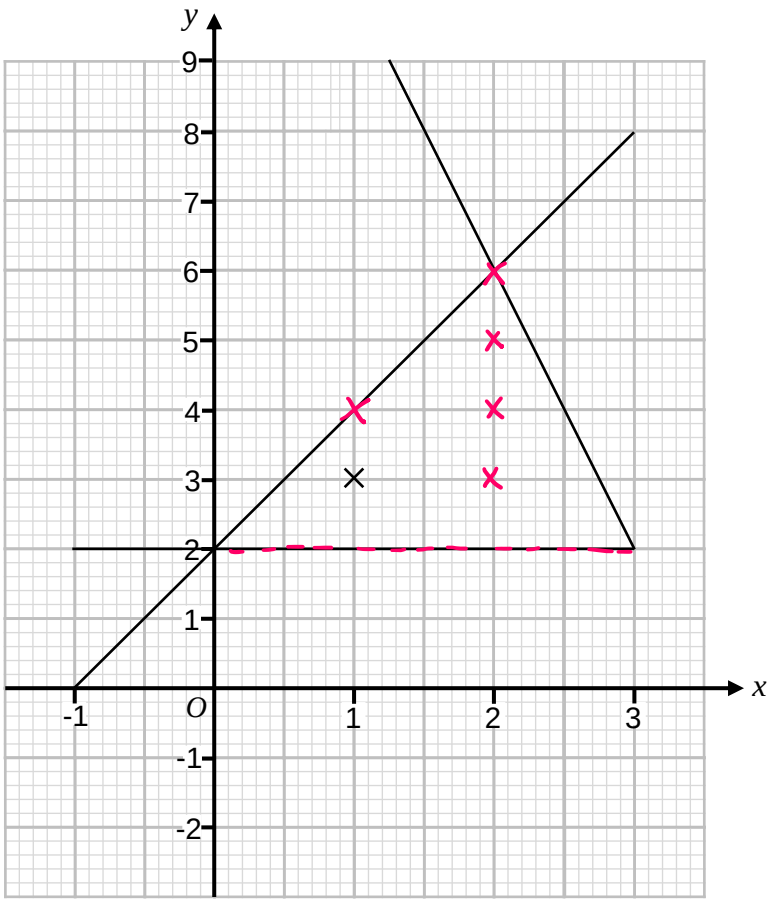
$y \geq 3$ $y \leq x + 4$ $2x + y < 8$

One has been done for you. **[2 marks]**

dotted

15 The diagram below shows the lines with equations

$y = 2$ $y = 2x + 2$ $y = 14 - 4x$



x and y are **integers.**

Mark on with a cross (×) each of the points that satisfy all three inequalities

$y > 2$ $y \leq 2x + 2$ $y \leq 14 - 4x$

↑ dotted

One has been done for you. **[2 marks]**

4