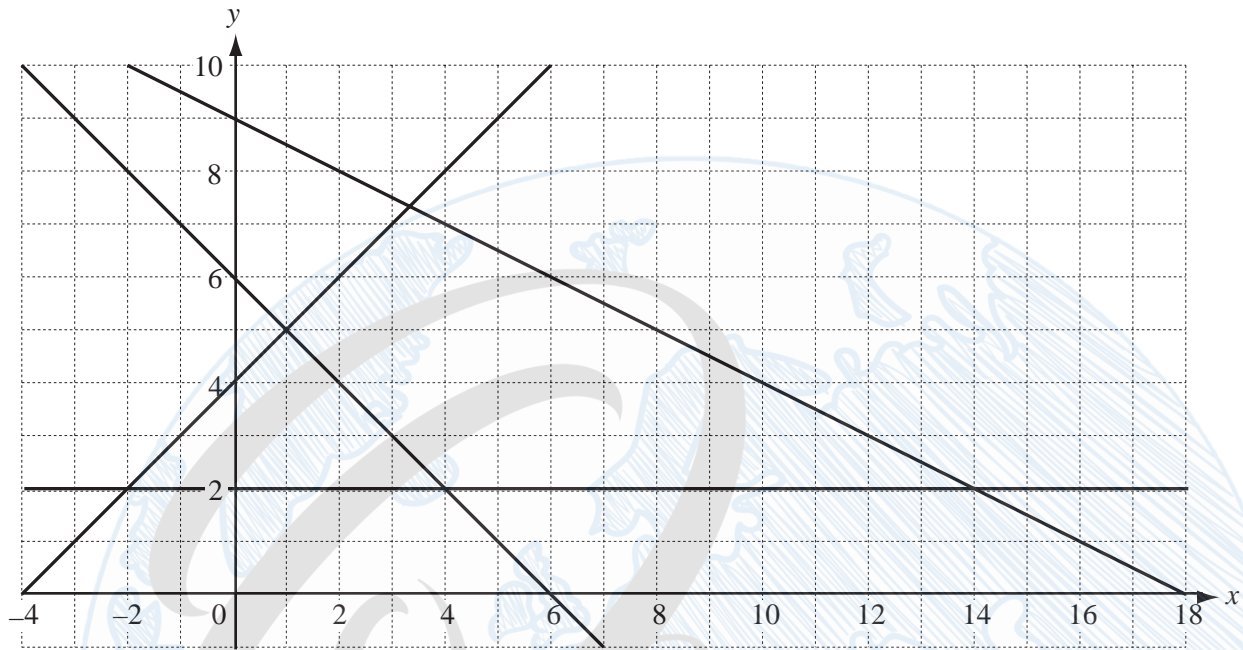# Linear Programing

14

By shading the **unwanted** regions of the grid above, find and label the region R which satisfies the following four inequalities.

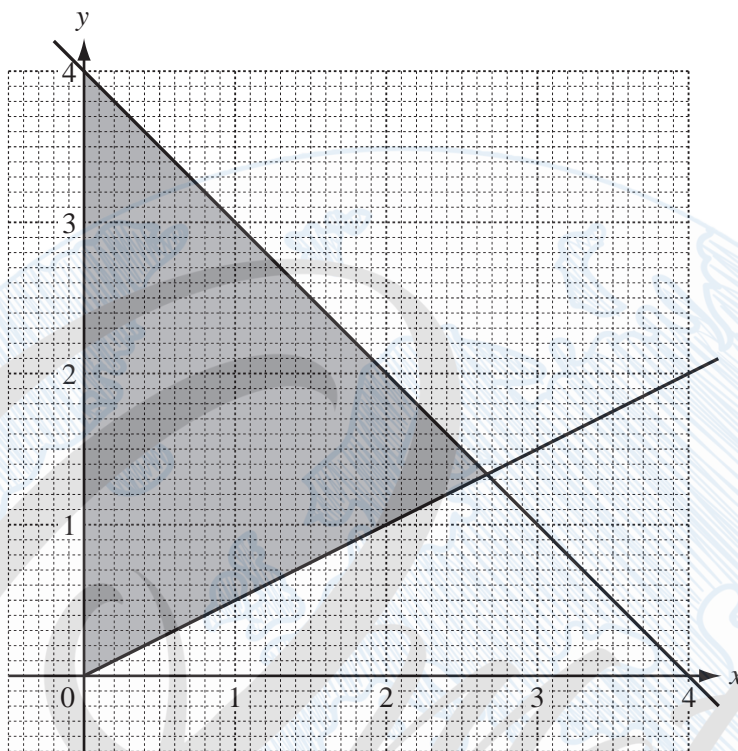$$y \geqslant 2 \qquad x + y \geqslant 6 \qquad y \leqslant x + 4 \qquad x + 2y \leqslant 18 \qquad [4]$$

20

Find the three inequalities which define the shaded region on the grid.

Answer ....
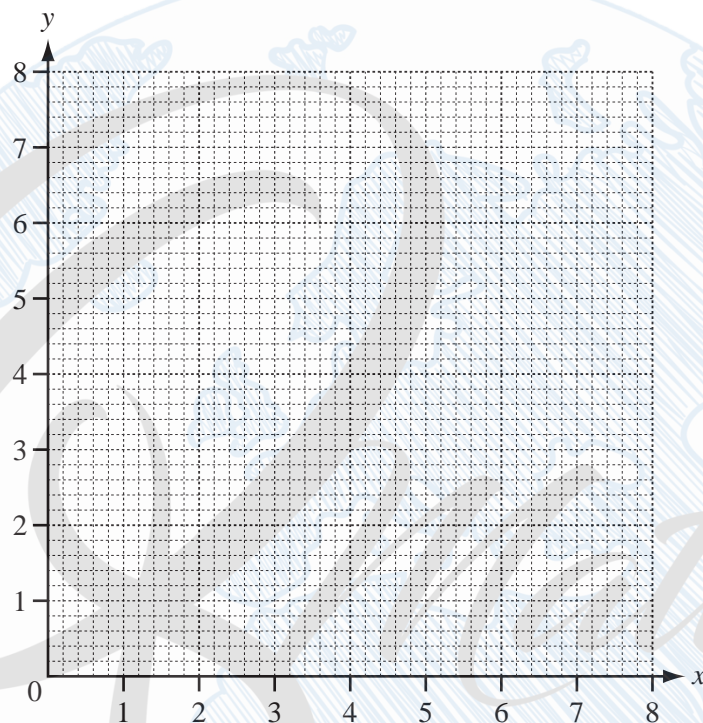
....

.... [5]

20

(a) Draw the lines $y = 2$, $x + y = 6$ and $y = 2x$ on the grid above. [4]

(b) Label the region R which satisfies the three inequalities

$x + y \geqslant 6$, $y \geqslant 2$ and $y \leqslant 2x$. [1]

22
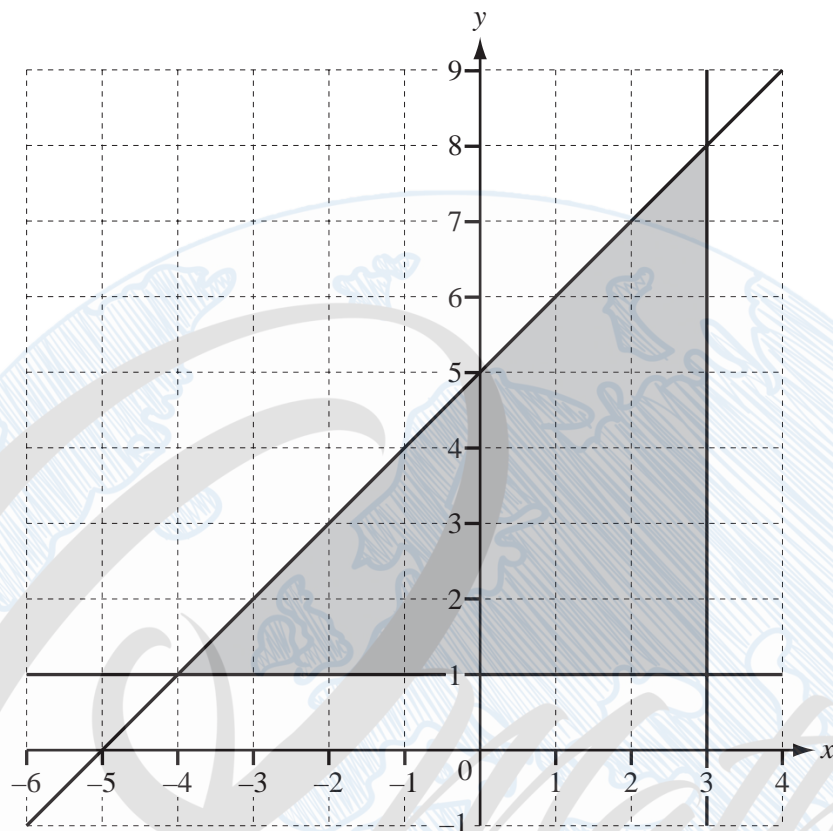
Find the three inequalities which define the shaded triangle in the diagram.

Answer ....

....

.... [5]
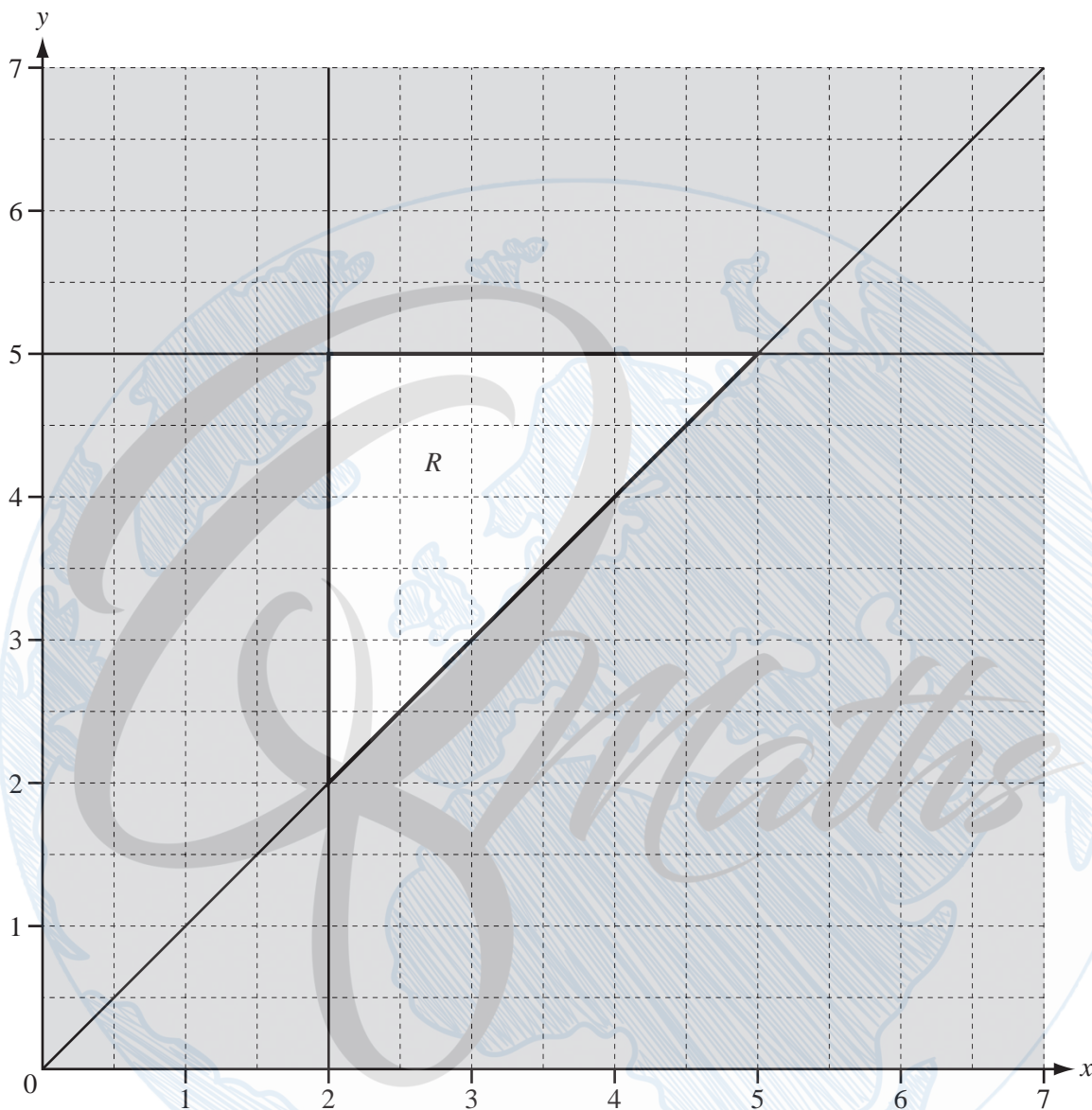
13

NOT TO
SCALE
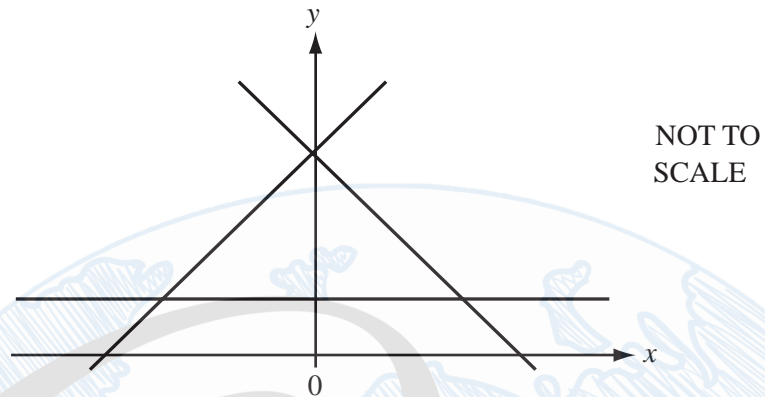
The diagram shows the lines $y = 1$, $y = x + 4$ and $y = 4 - x$.

On the diagram, **label the region R** where $y \geqslant 1$, $y \geqslant x + 4$ and $y \leqslant 4 - x$. [3]

14

The region R is bounded by three lines.

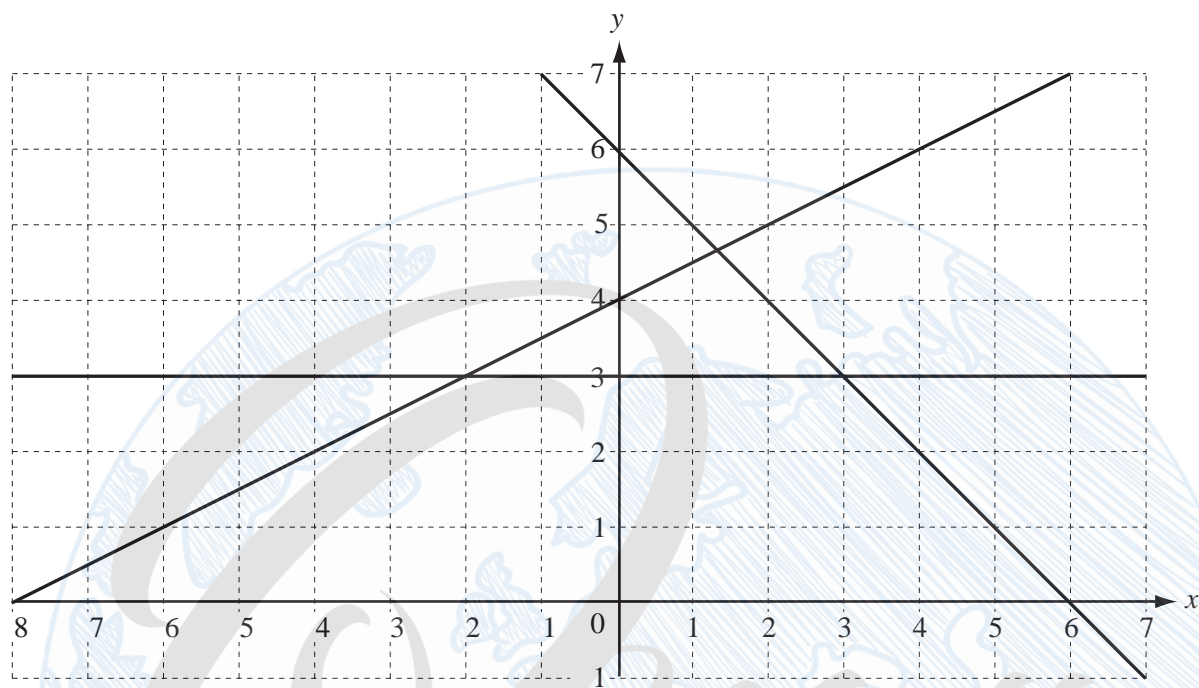Write down the three inequalities which define the region R.

Answer ....

....

.... [4]

14

The region **R** contains points which satisfy the inequalities

$$y \leqslant \frac{1}{2}x + 4, \qquad y \geqslant 3 \quad \text{and} \quad x + y \geqslant 6.$$

On the grid, label with the letter **R** the region which satisfies these inequalities.
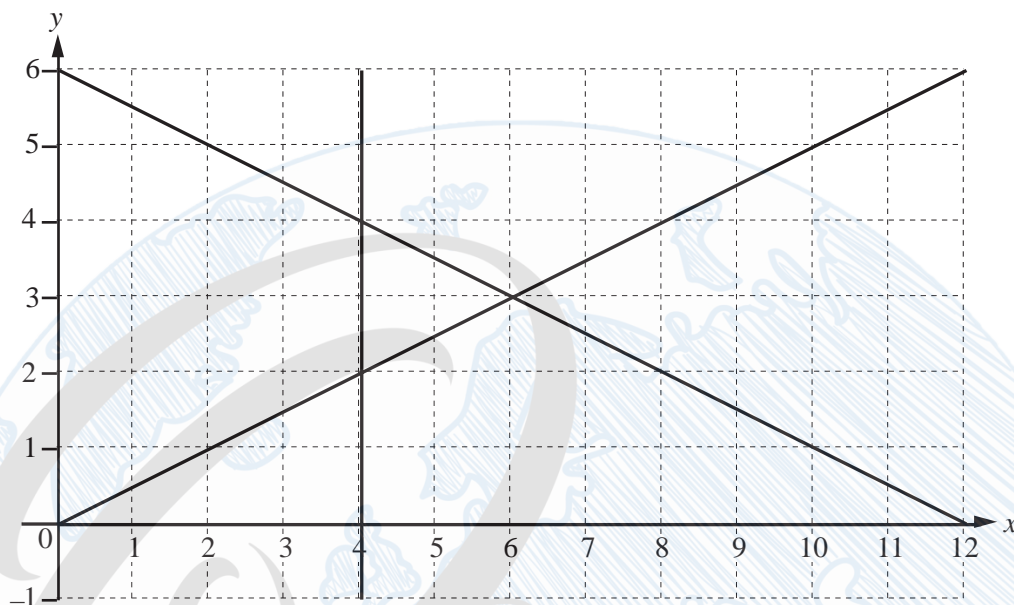
You must shade the **unwanted** regions. [3]

12

By shading the **unwanted** regions of the grid, find and label the region R which satisfies the following four inequalities.

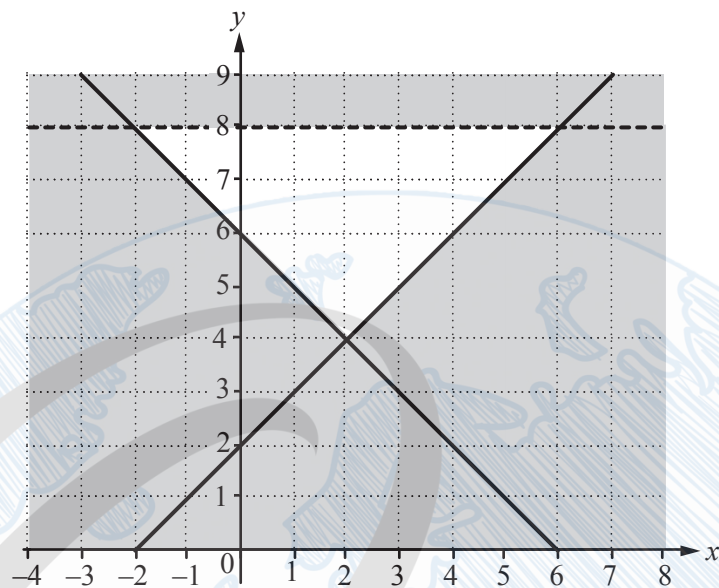$$y \geqslant 0 \qquad x \geqslant 4 \qquad 2y \leqslant x \qquad 2y + x \leqslant 12$$

[3]

15

Write down the 3 inequalities which define the unshaded region.

Answer

....

.... [4]

19
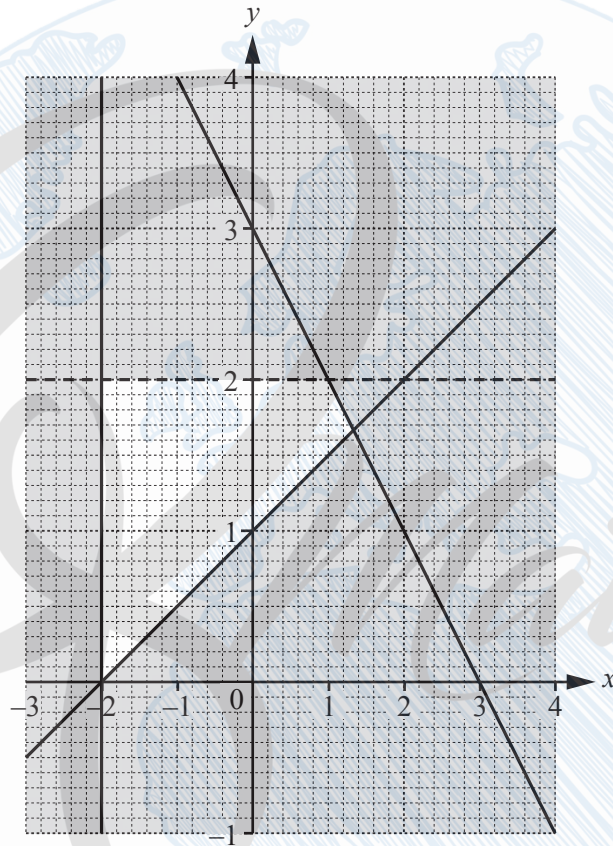
Find the four inequalities that define the region that is **not** shaded.

....

....

....

.... [5]

23
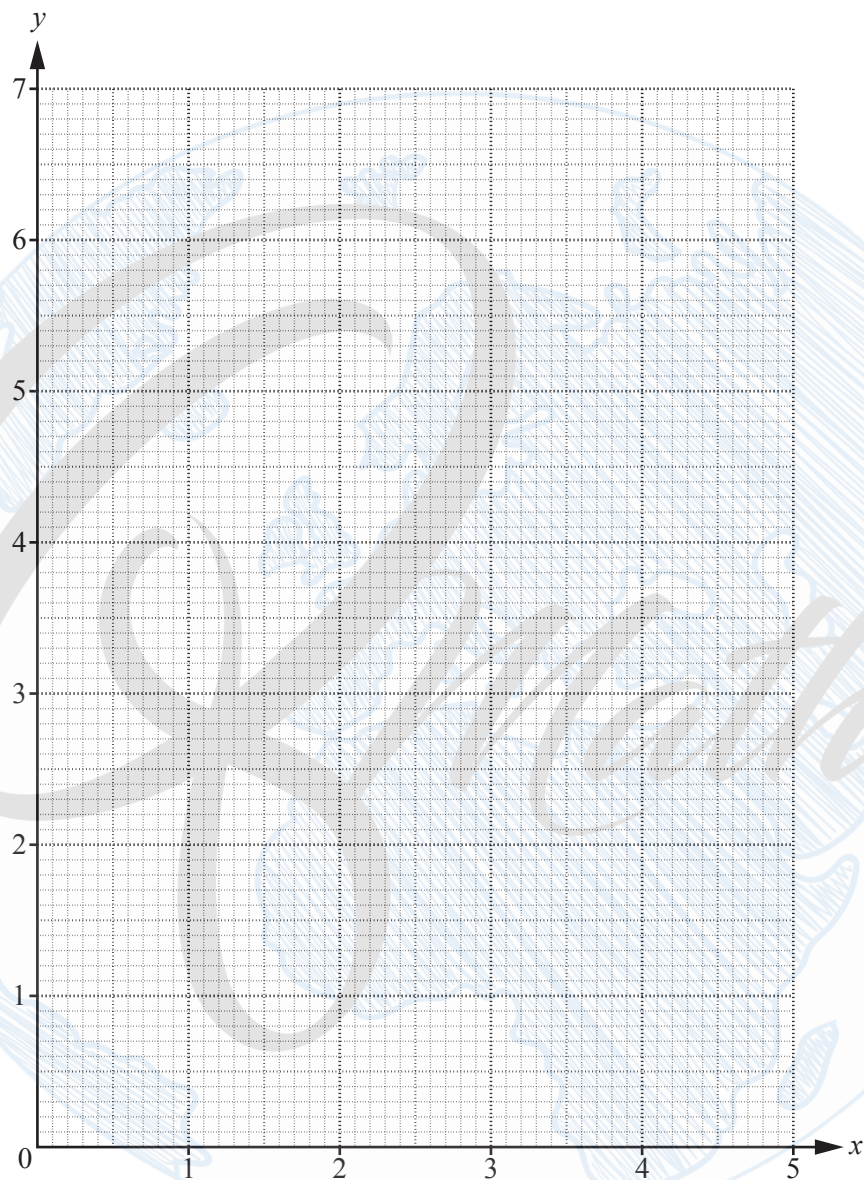
The region R satisfies these inequalities.
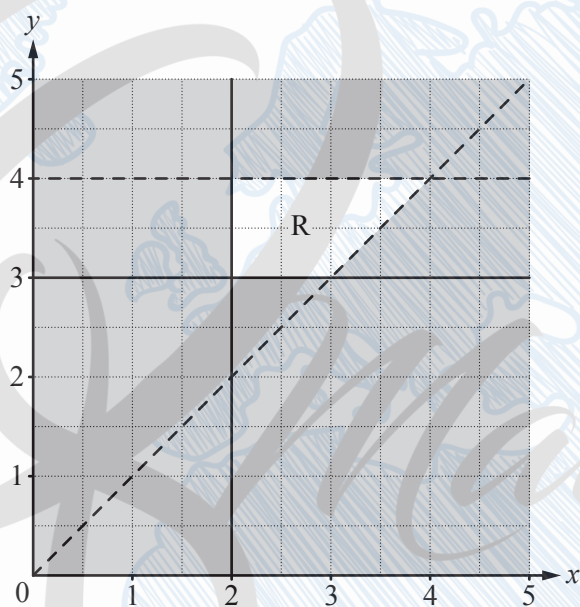
$$y \leqslant 2x \qquad 3x + 4y \geqslant 12 \qquad x \leqslant 3$$

On the grid, draw and label the region R that satisfies these inequalities.
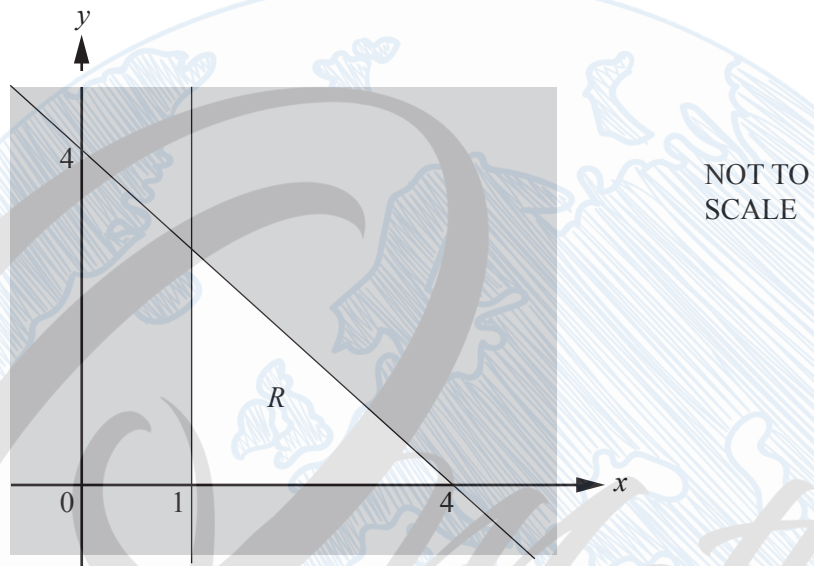Shade the **unwanted** regions.

[5]

20

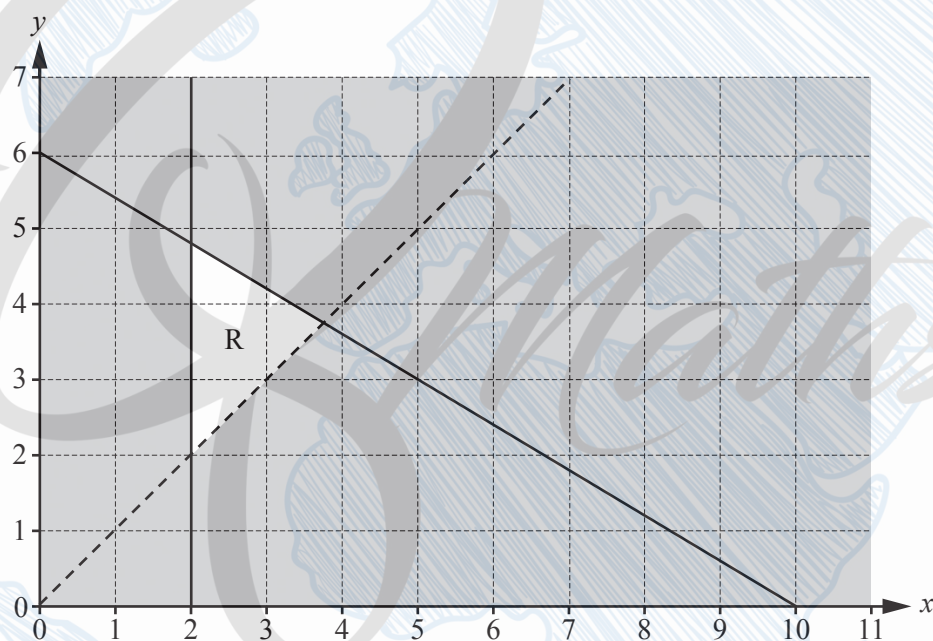Find four inequalities that define the region, R, on the grid.

....

....

....

.... [4]

21

NOT TO
SCALE

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

....

....

.... [4]

24

Find the three inequalities that define the unshaded region, R.

....

.... [5]

21
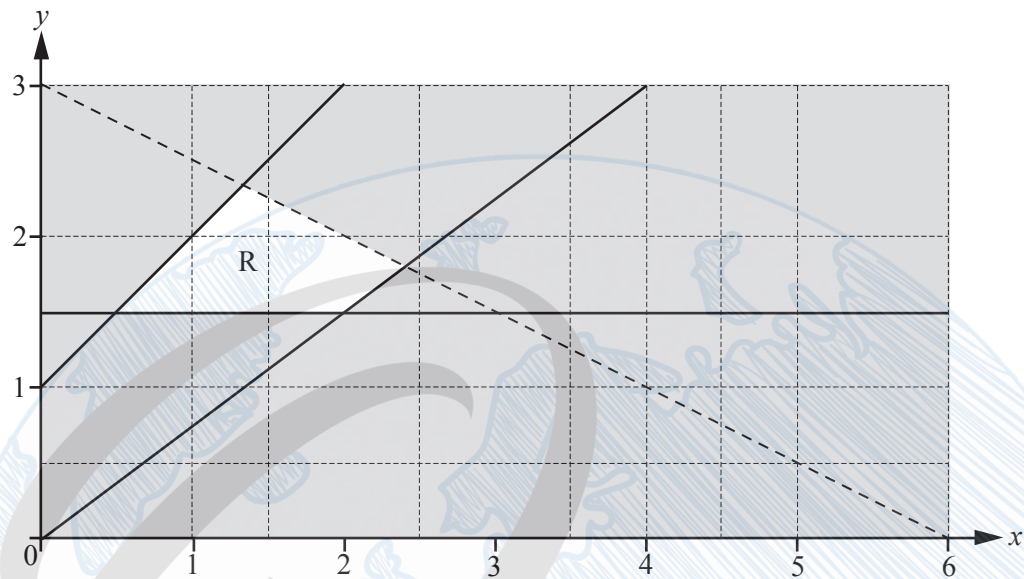
There are four inequalities that define the region R.
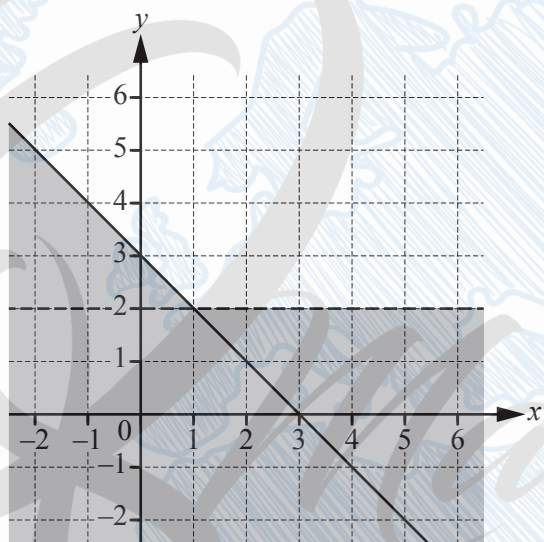One of these is $y \leqslant x + 1$.

Find the other three inequalities.

....

....

.... [4]

19

Find the two inequalities that define the region on the grid that is **not** shaded.

....

.... [3]