

Name:

Exam Style Questions

## Graphical Inequalities



Equipment needed: Pen, Ruler, Pencil and Calculator

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

Videos 180, 181, 182



Answers and Video Solutions



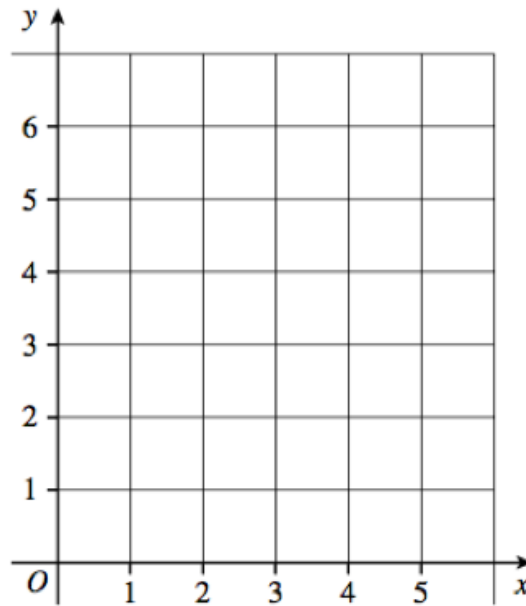
1. On the grid, clearly indicate the region that satisfies all these inequalities.



$$x \geq 3$$

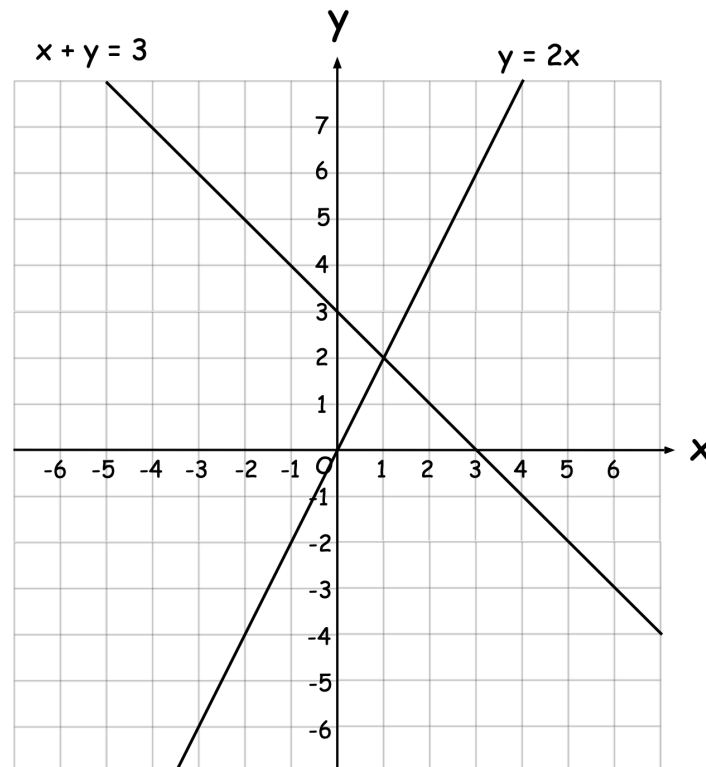
$$y \geq 1$$

$$x + y \leq 5$$



(3)

2.



Draw another line on the grid and label the region that satisfies the inequalities

$$x + y \leq 3$$

$$y \leq 2x$$

$$y \geq -3$$

(2)

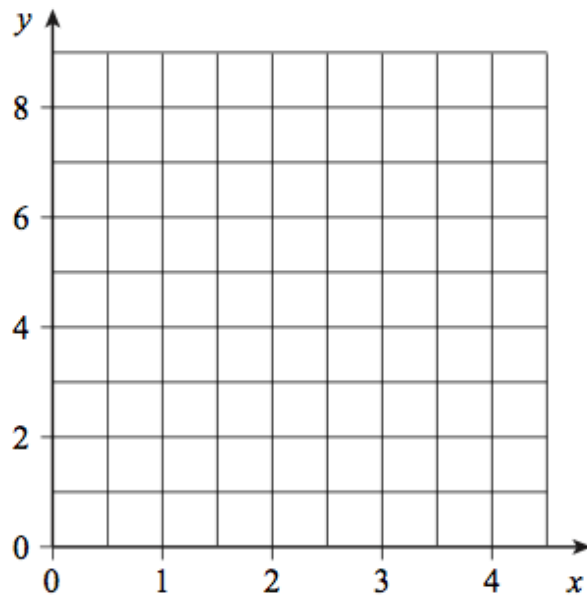
3. On the grid, clearly indicate the region that satisfies all these inequalities.



$$y < x$$

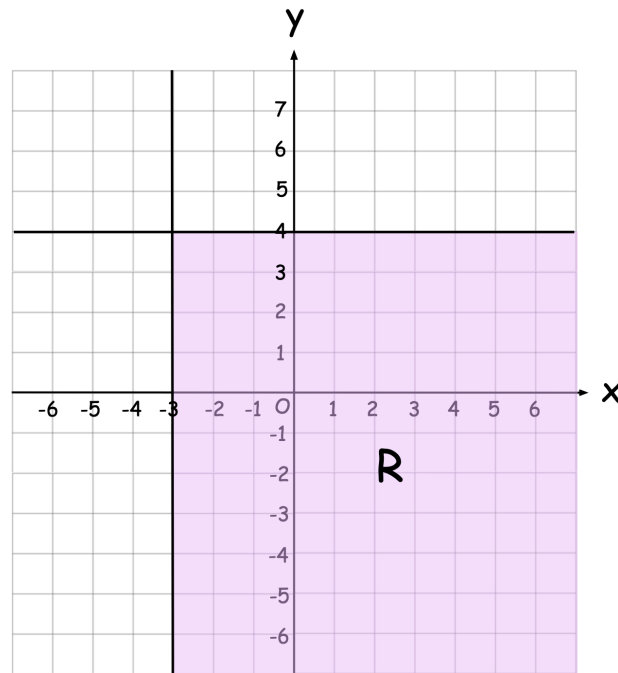
$$y \geq 1$$

$$x + y \leq 4$$



(3)

4.



Tick the pair of inequalities that describe the shaded region.

$$x \geq -3 \text{ and } y \geq 4$$

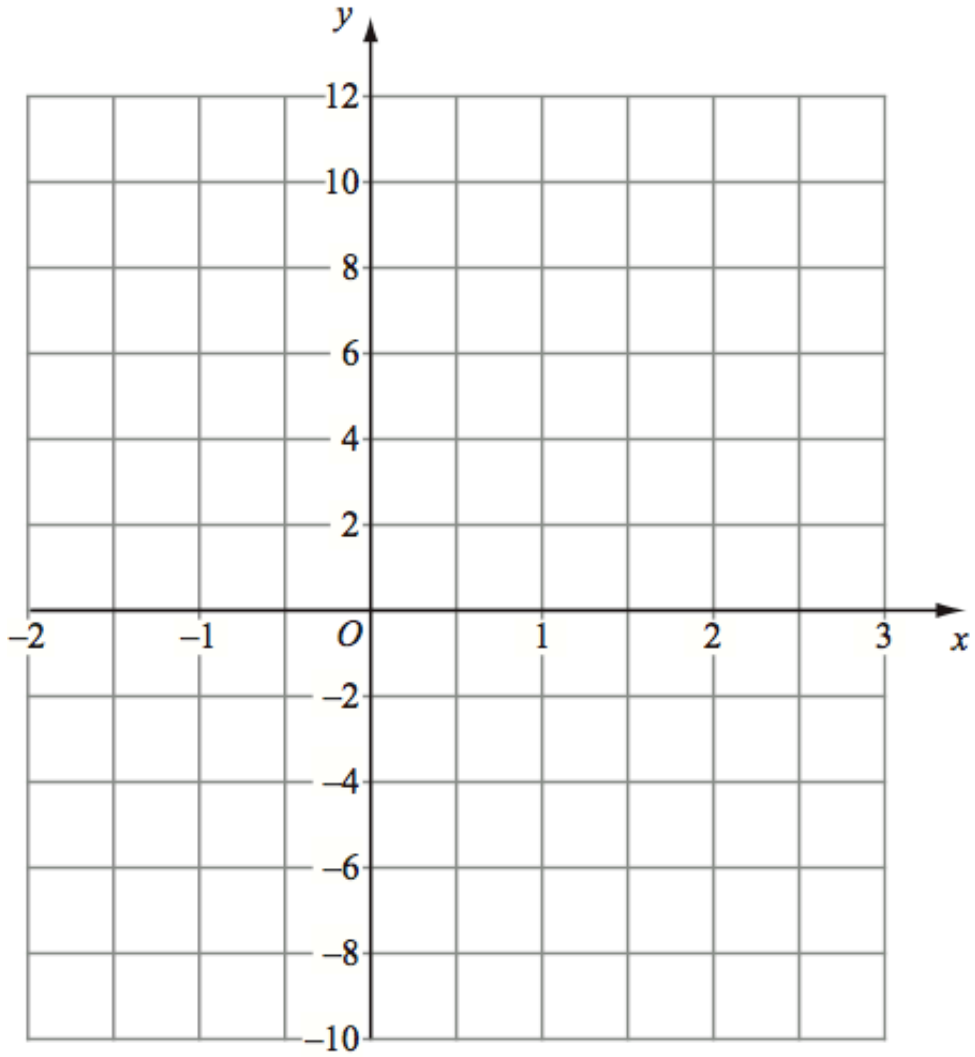
$$x \geq -3 \text{ and } y \leq 4$$

$$x \leq -3 \text{ and } y \geq 4$$

$$x \leq -3 \text{ and } y \leq 4$$

(1)

5.



On the grid, label the region that satisfies all three of these inequalities

$$-1 < x < 2$$

$$y \leq 8$$

$$y \geq 4x - 4$$

(4)

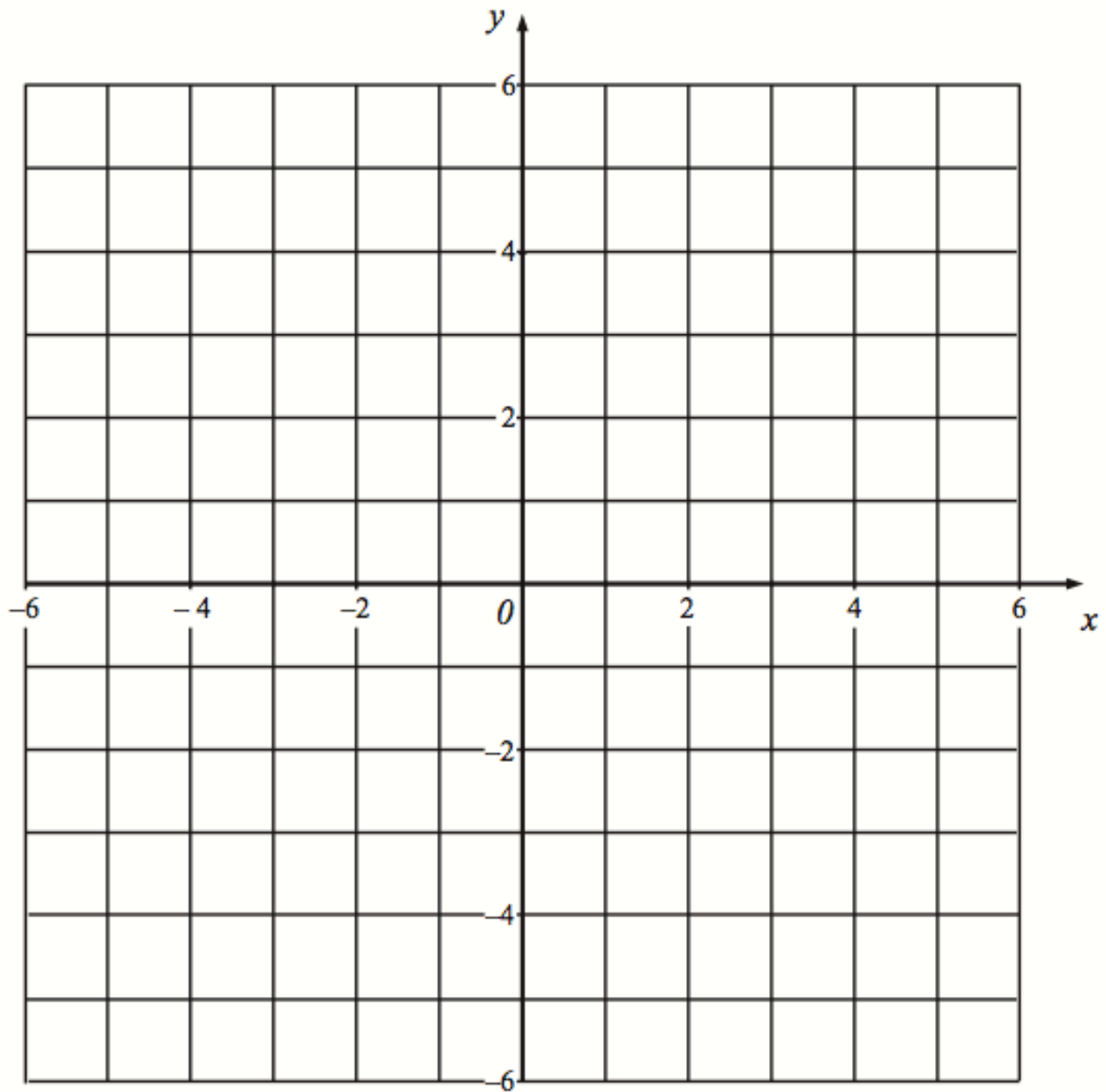
6. On the grid, label the region that satisfies all three of these inequalities



$x < 3$

$y > -3$

$y < 2x$



(3)

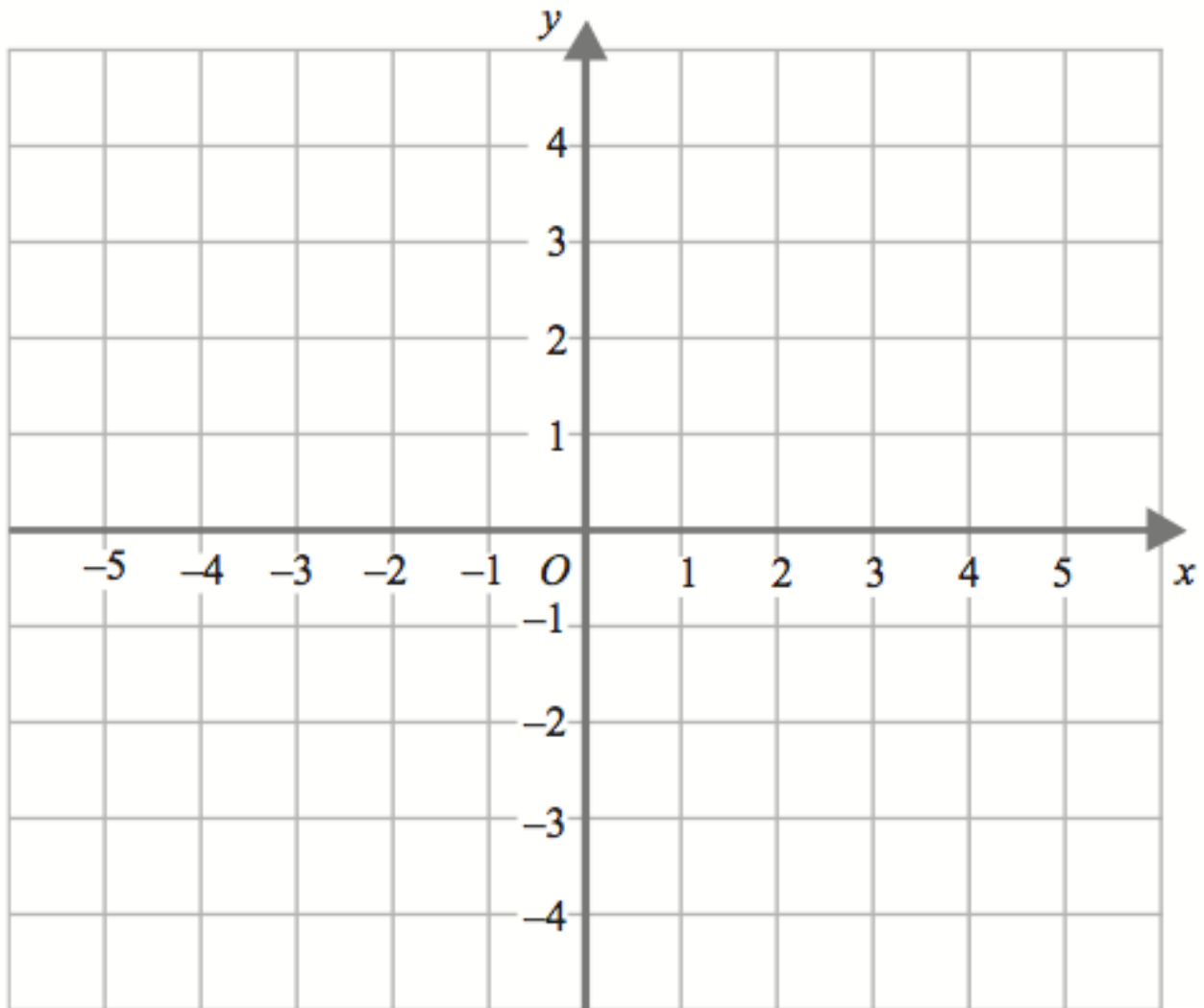
7. On the grid, clearly label the region which satisfies all three inequalities below



$$x \leq 2$$

$$y \leq 2x - 2$$

$$x + y + 2 \geq 0$$



(4)

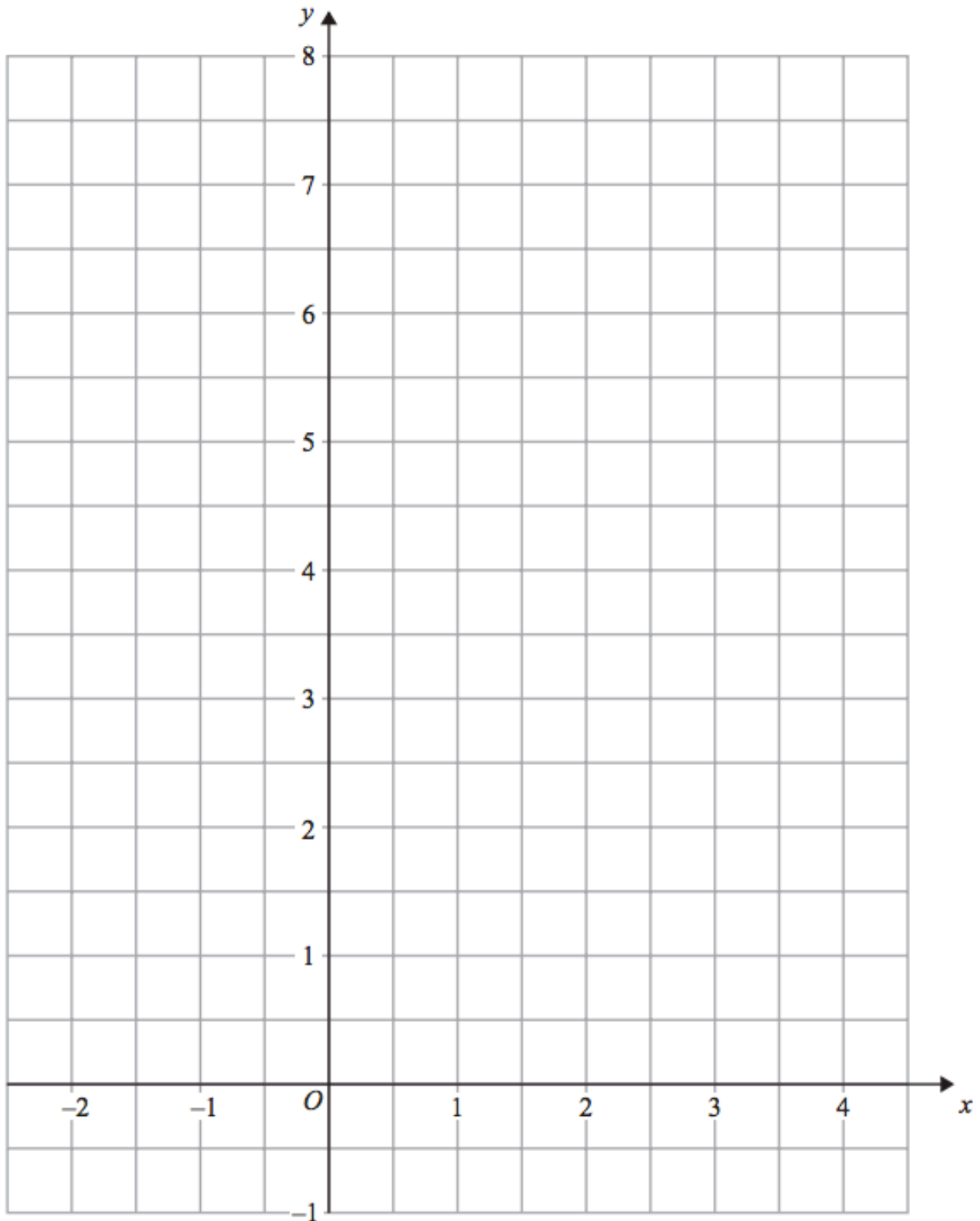
8. On the grid, clearly label the region which satisfies all three inequalities below



$$x > 0$$

$$y \geq \frac{1}{2}x$$

$$x + 2y < 4$$



(4)

9. A greengrocer sells bananas and apples.



In one day he sells

less than 80 bananas

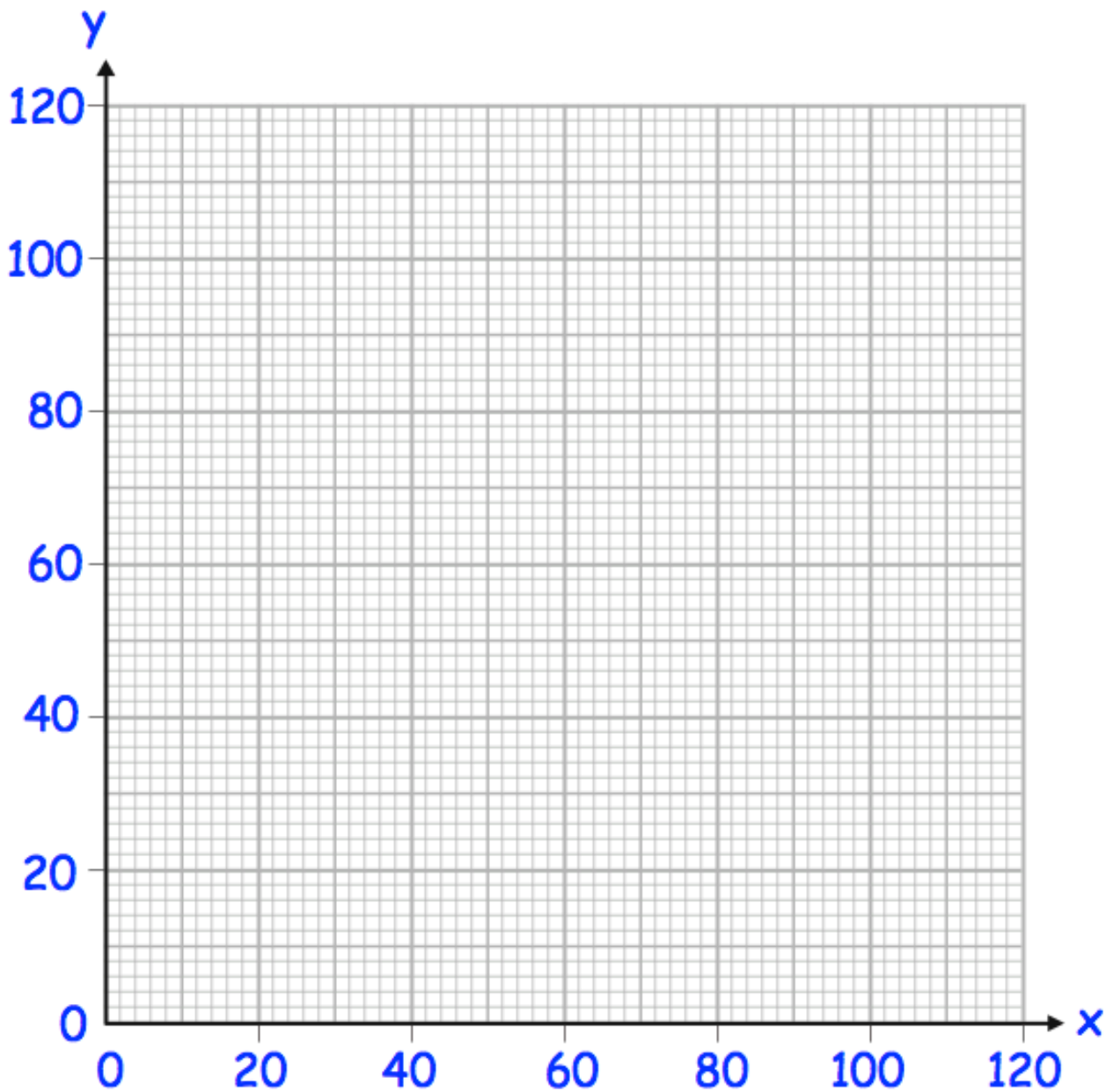
less than 90 apples

no more than a total of 110 pieces of fruit

Let  $x$  be the number of bananas sold

Let  $y$  be the number of apples sold.

Show the region below that satisfies these inequalities



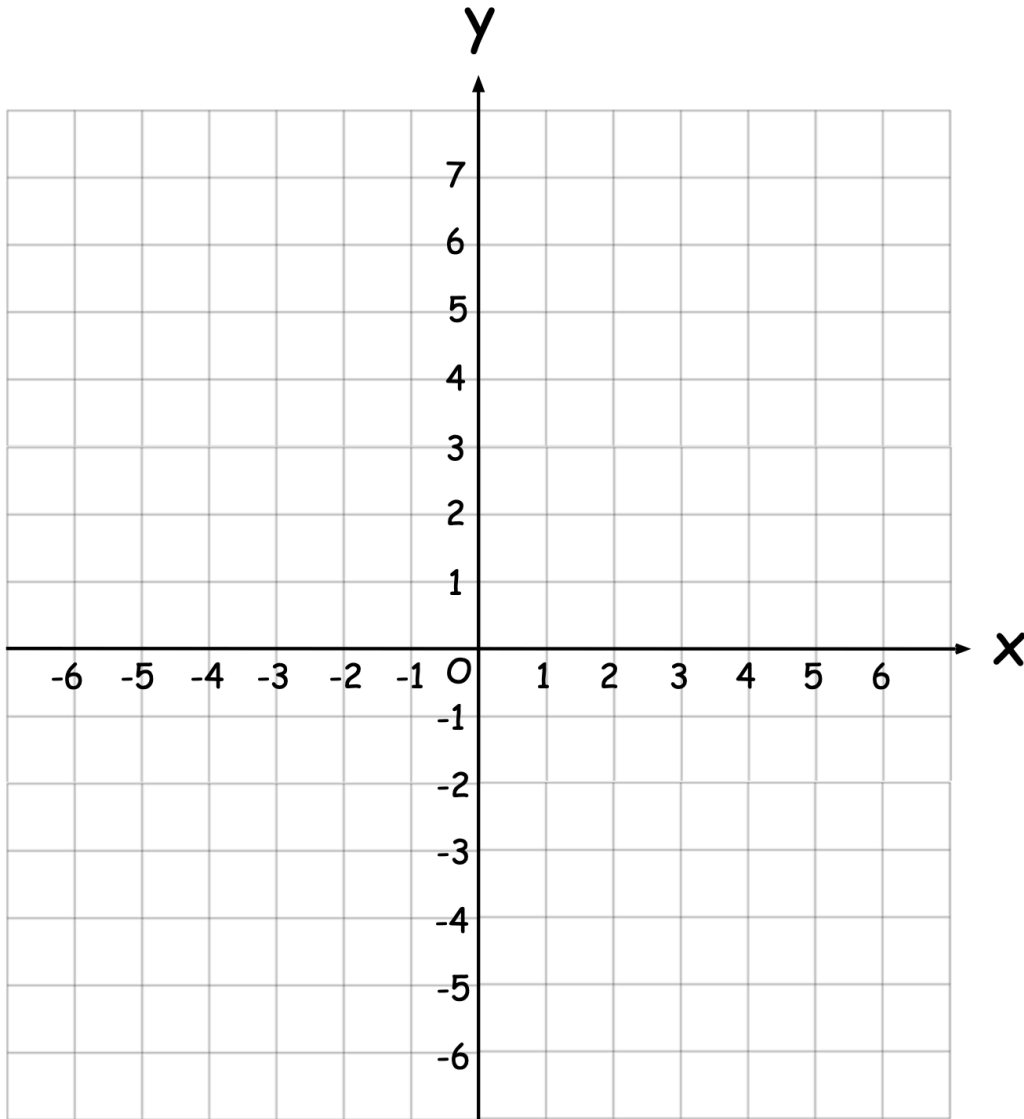
(4)

10. On the grid below, shade the region that satisfies the inequalities below.

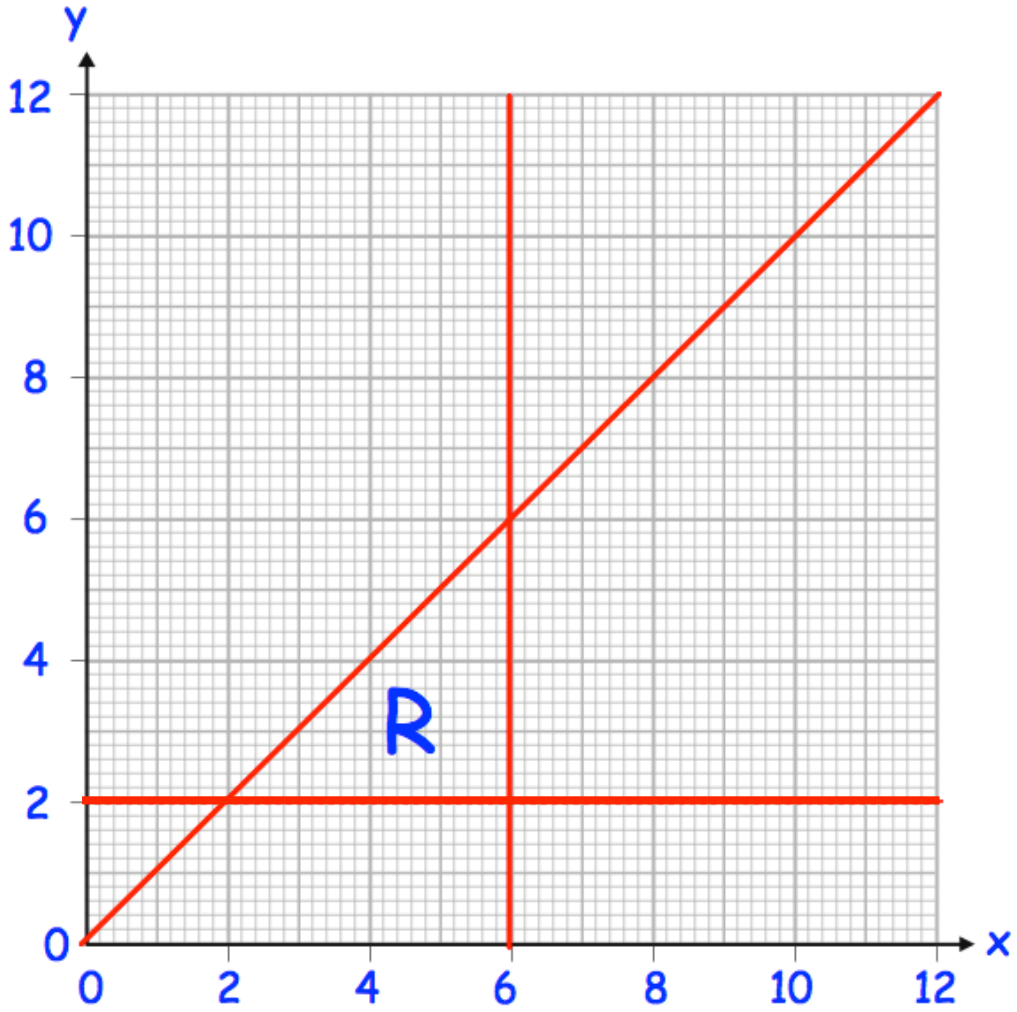


$$y \geq -5 \quad y \leq x \quad 5x - 2y \geq 1 \quad 3x + 2y \leq 6$$

Label the region R.



11.



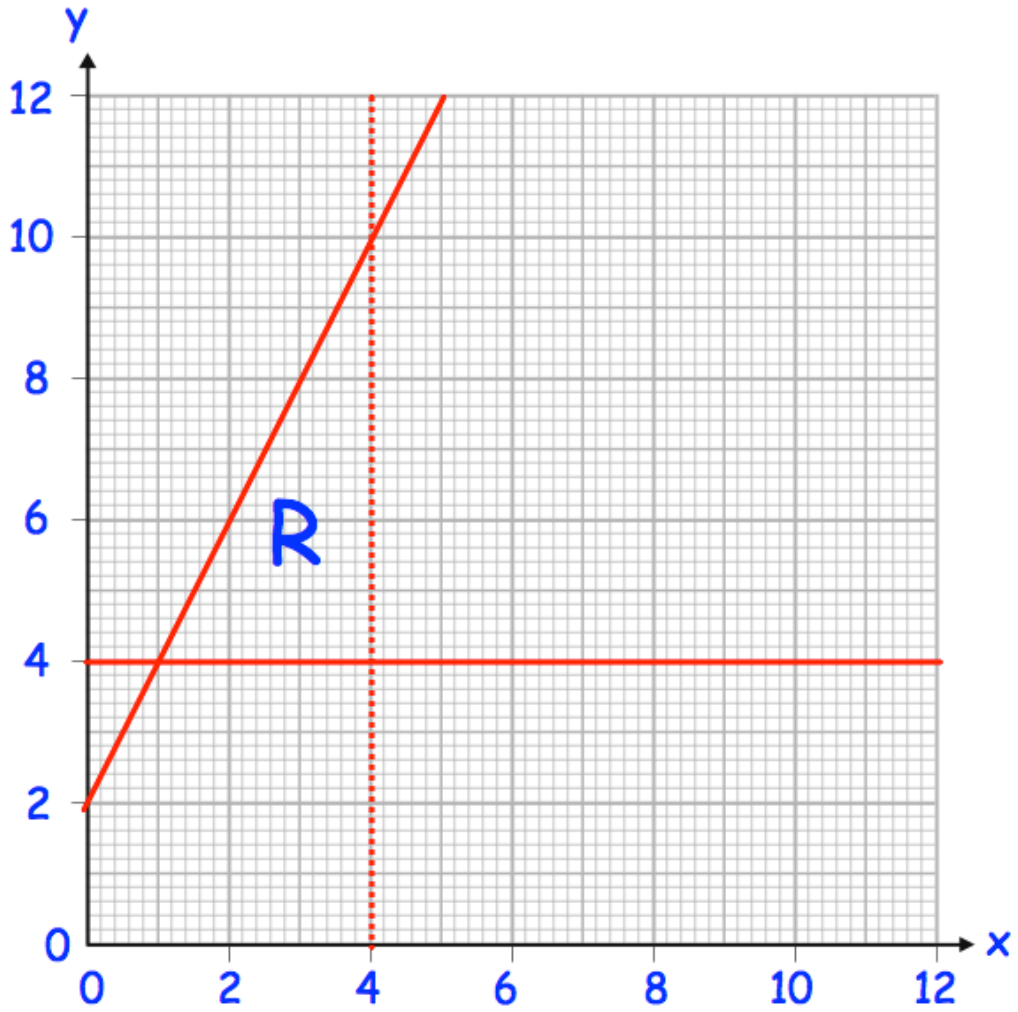
The region labelled R satisfies three inequalities.

State the three inequalities

.....  
.....  
.....

**(3)**

12.



The region labelled R satisfies three inequalities.

State the three inequalities

.....

.....

.....

(3)

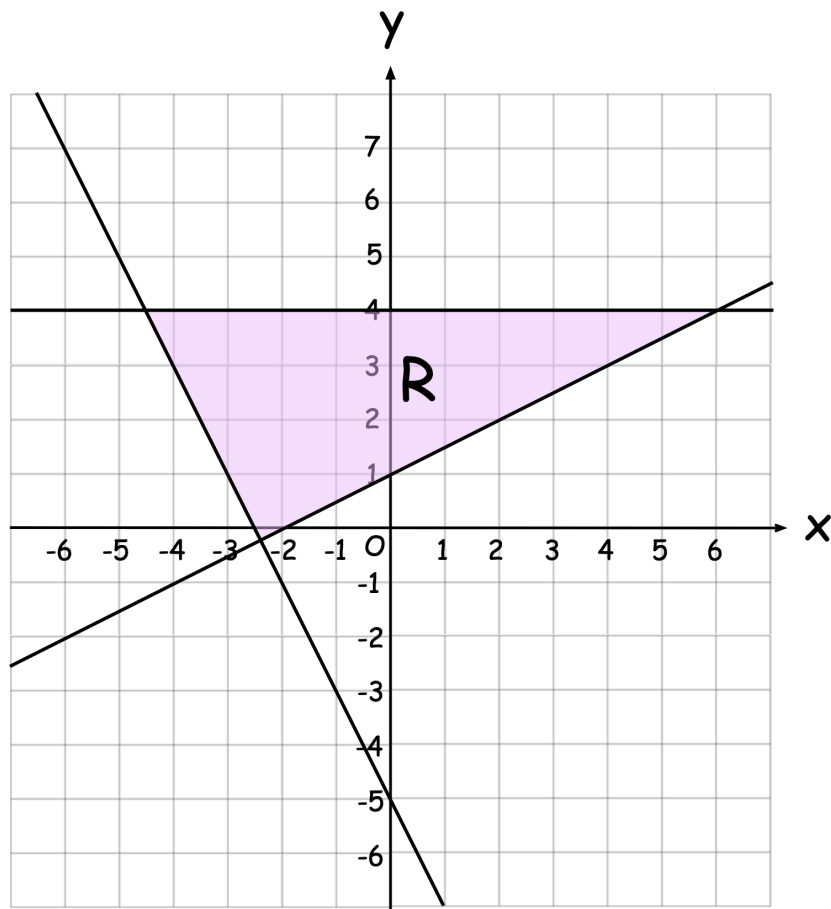
13. Martina has drawn the region that satisfies the 3 inequalities.



$$y \leq 4$$

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

$$y \geq \frac{1}{2}x + 1$$



Tick whether each of the following points satisfies all 3 inequalities.

(a) (2, 1)

Yes

No

(1)

(b) (3, 3)

Yes

No

(1)

(c) (-4, 2)

Yes

No

(1)

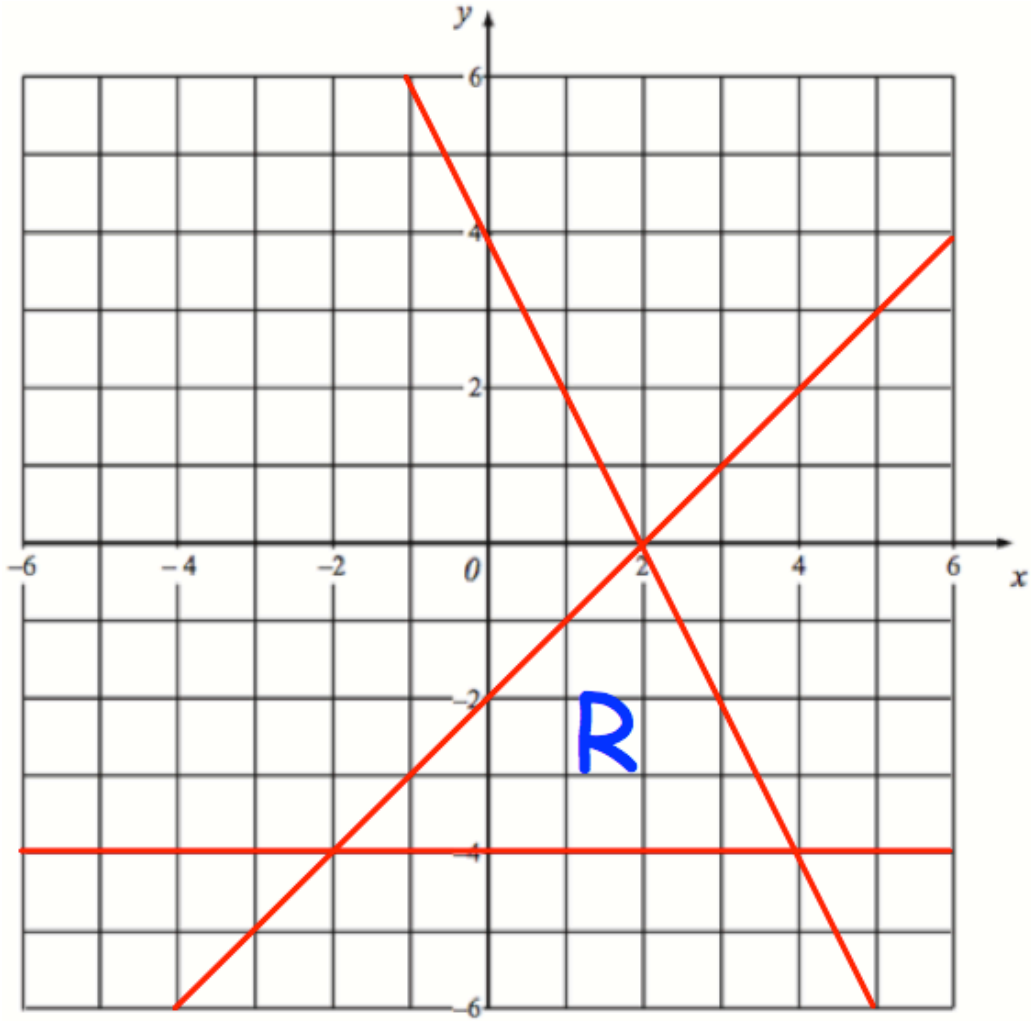
(d) (-3, 1)

Yes

No

(1)

14.



The region labelled R satisfies three inequalities.

State the three inequalities

.....  
.....  
.....

**(3)**

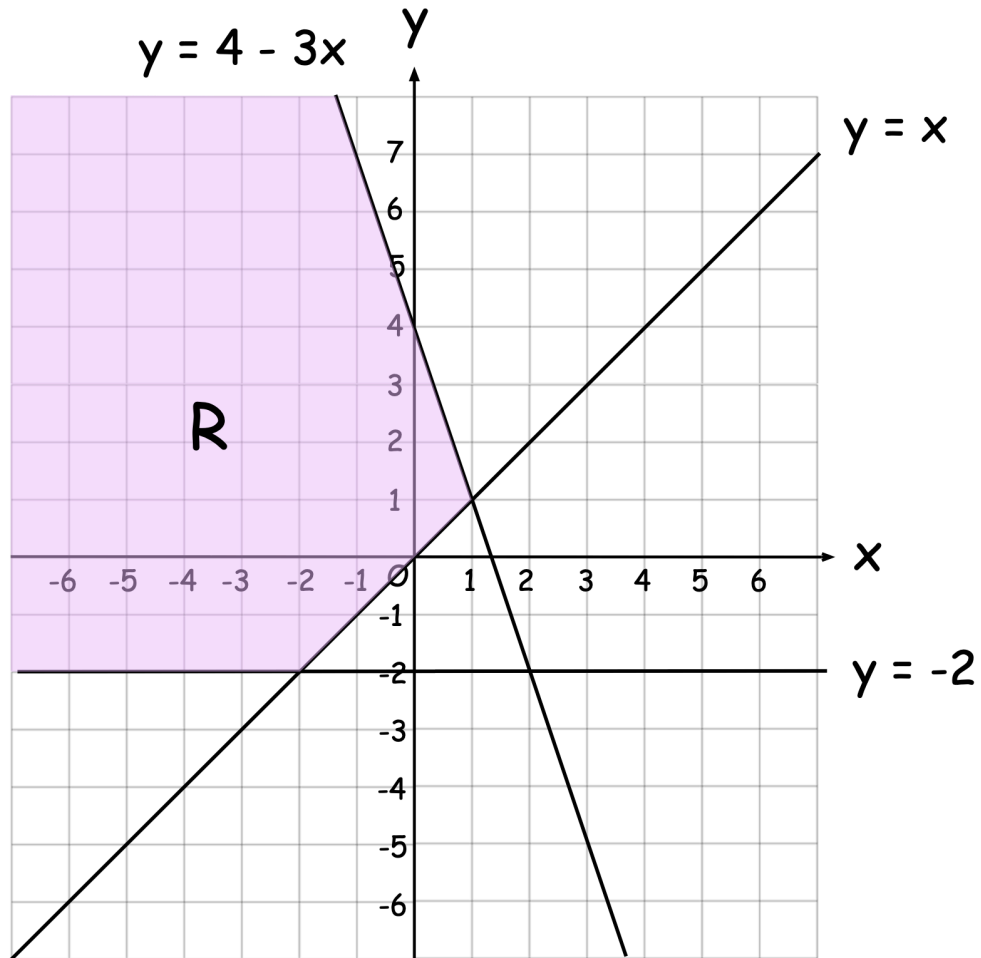
15. Sanjeev has been asked to show the region represented by



$$y \geq -2$$

$$y \leq x$$

$$y \leq 4 - 3x$$



Sanjeev has made a mistake.

Explain his mistake.

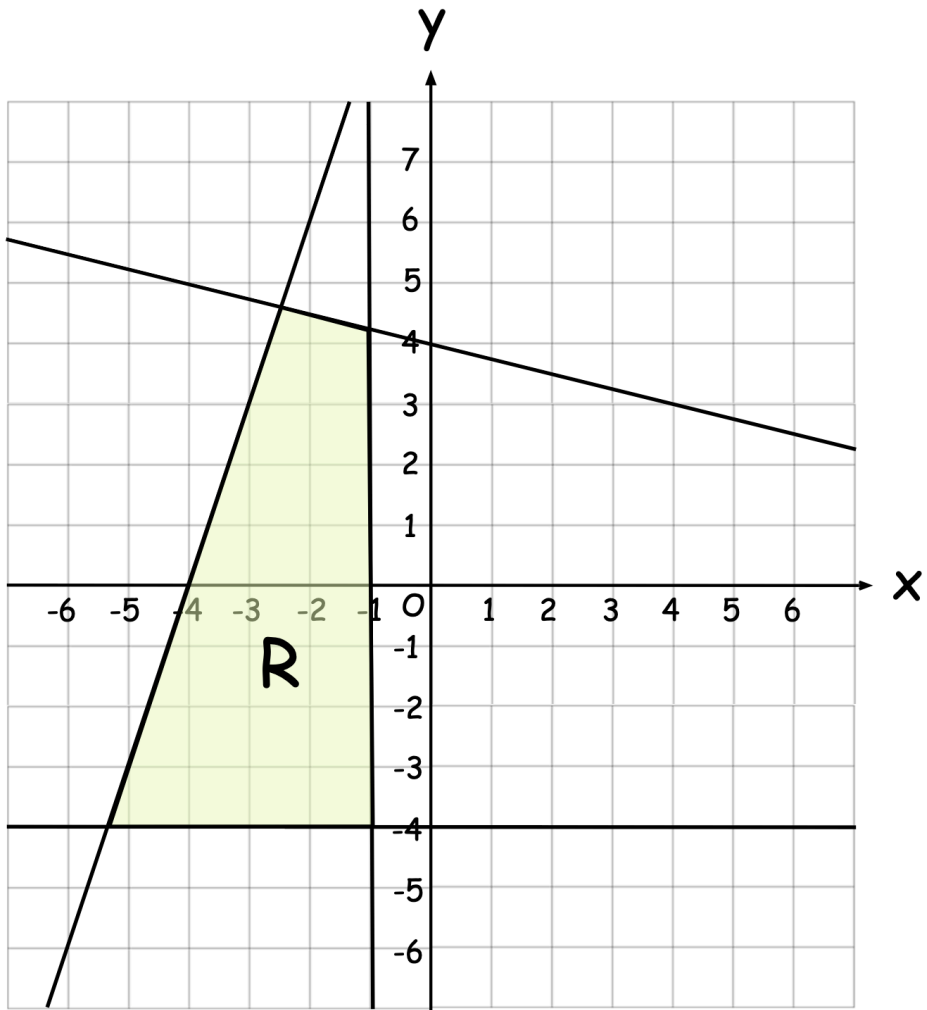
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(2)

16.



Write down the four inequalities that define the shaded region.

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.....

(4)