

Name: \_\_\_\_\_

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# Graphical Inequalities

Date:

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Time:

Total marks available: 21

Total marks achieved: \_\_\_\_\_

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## Questions

Q1.

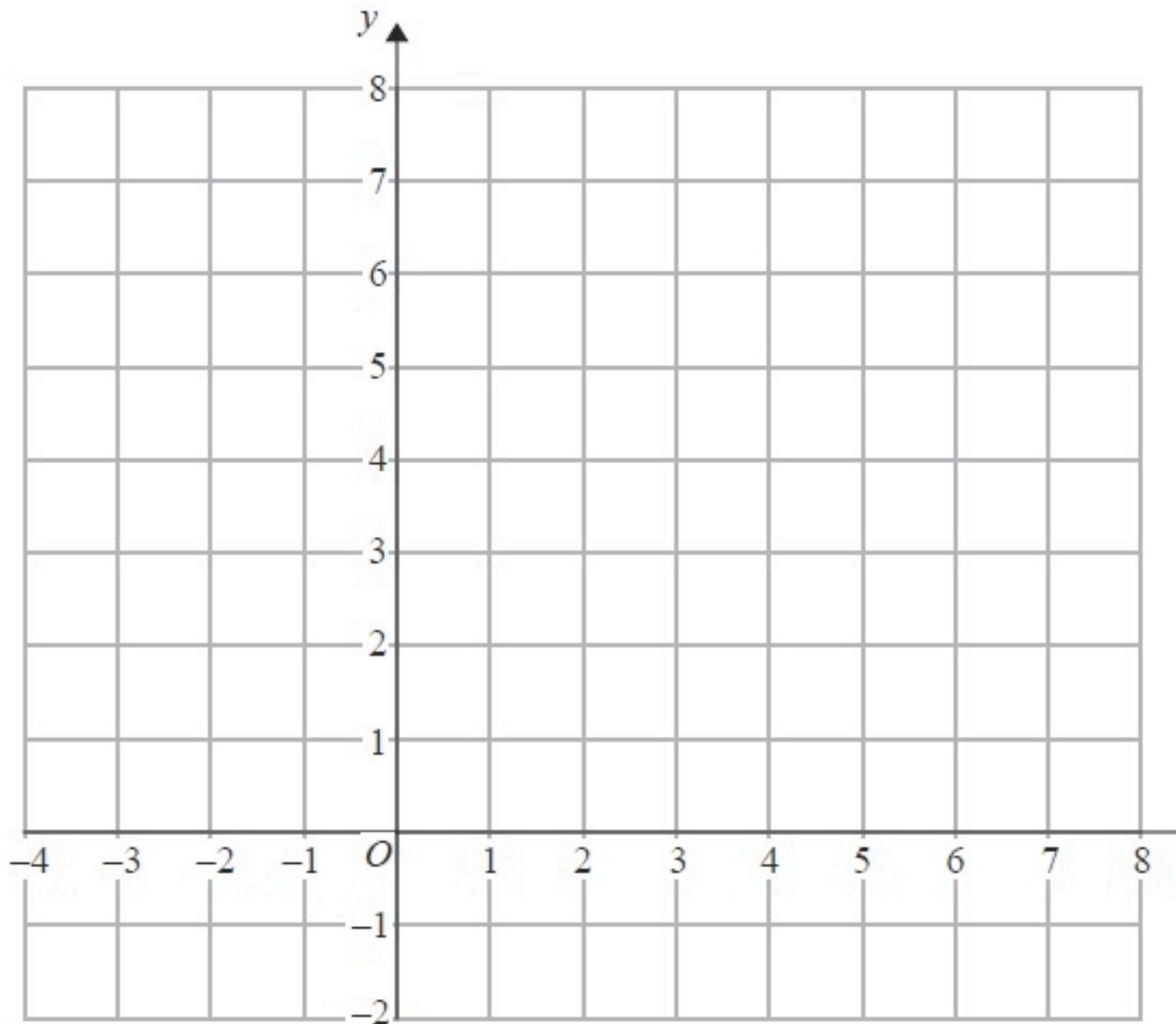
On the grid below, show by shading, the region defined by the inequalities

$$x + y < 6$$

$$x > -1$$

$$y > 2$$

Mark this region with the letter R.



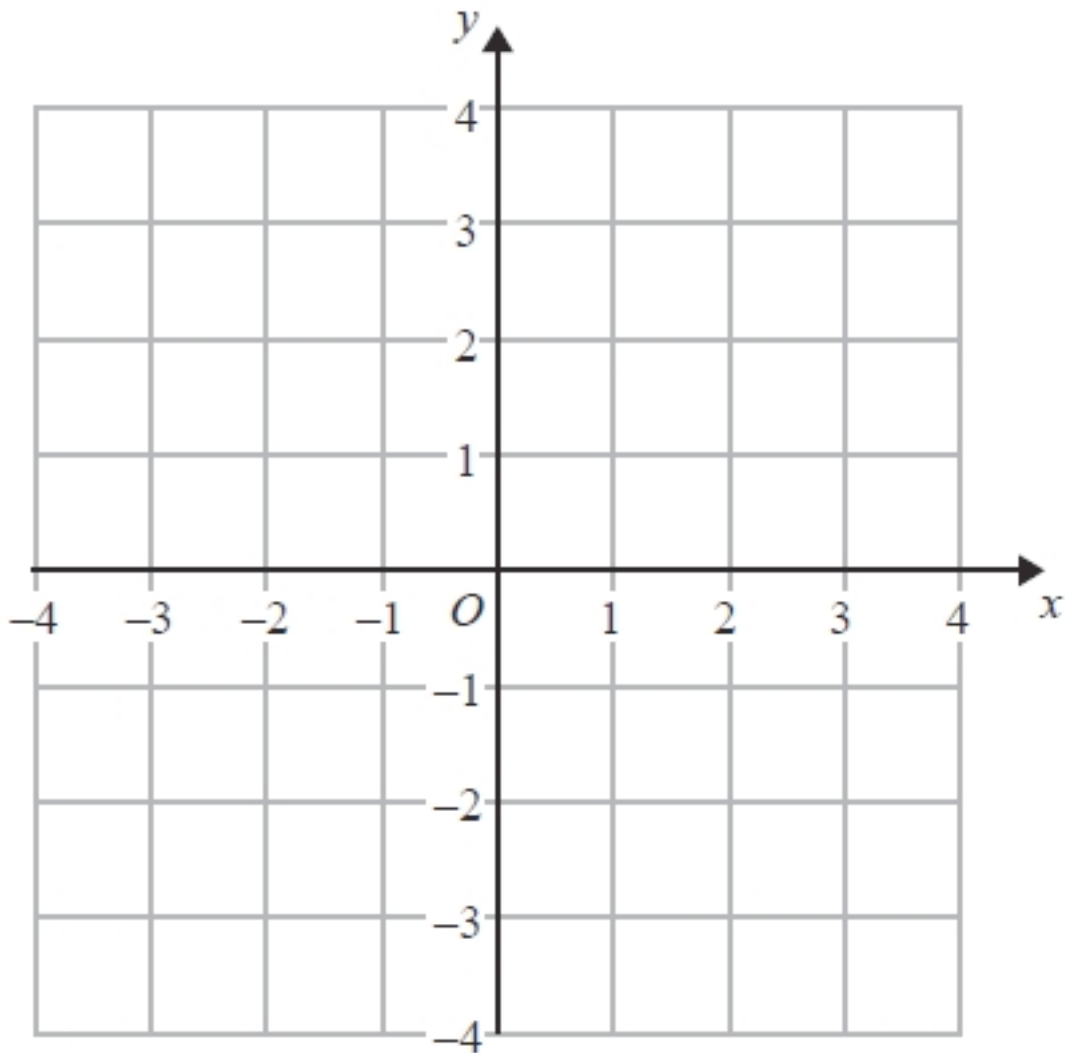
(Total for Question is 4 marks)

**Q2.**

(a) Solve the inequality  $5e + 3 > e + 12$

.....  
(2)

(b) On the grid, shade the region defined by the inequality  $x + y > 1$



(2)

**(Total for Question is 4 marks)**

**Q3.**

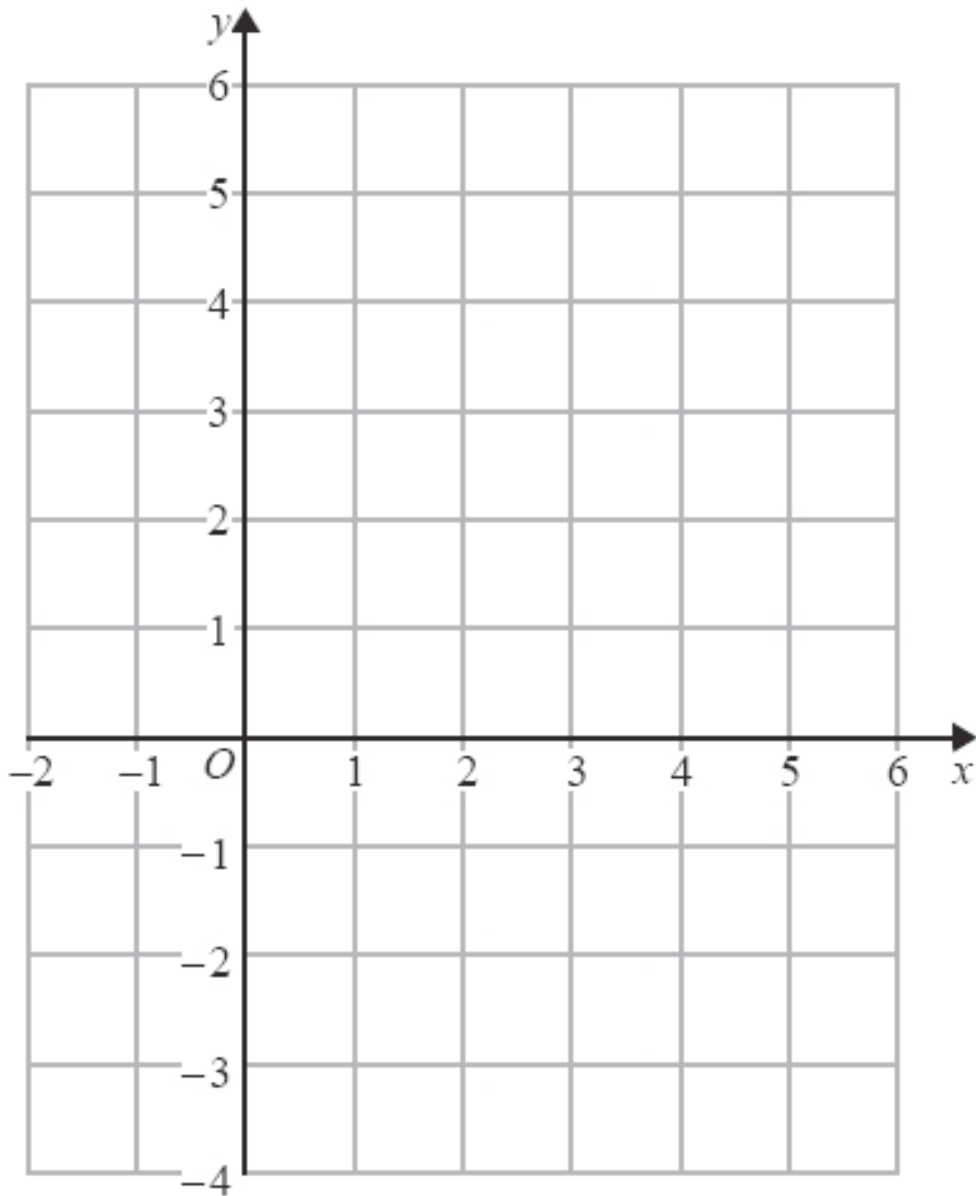
(a) Given that  $x$  and  $y$  are integers such that

$$\begin{aligned} 3 < x < 7 \\ 4 < y < 9 \\ \text{and } x + y = 13 \end{aligned}$$

find all the possible values of  $x$ .

.....

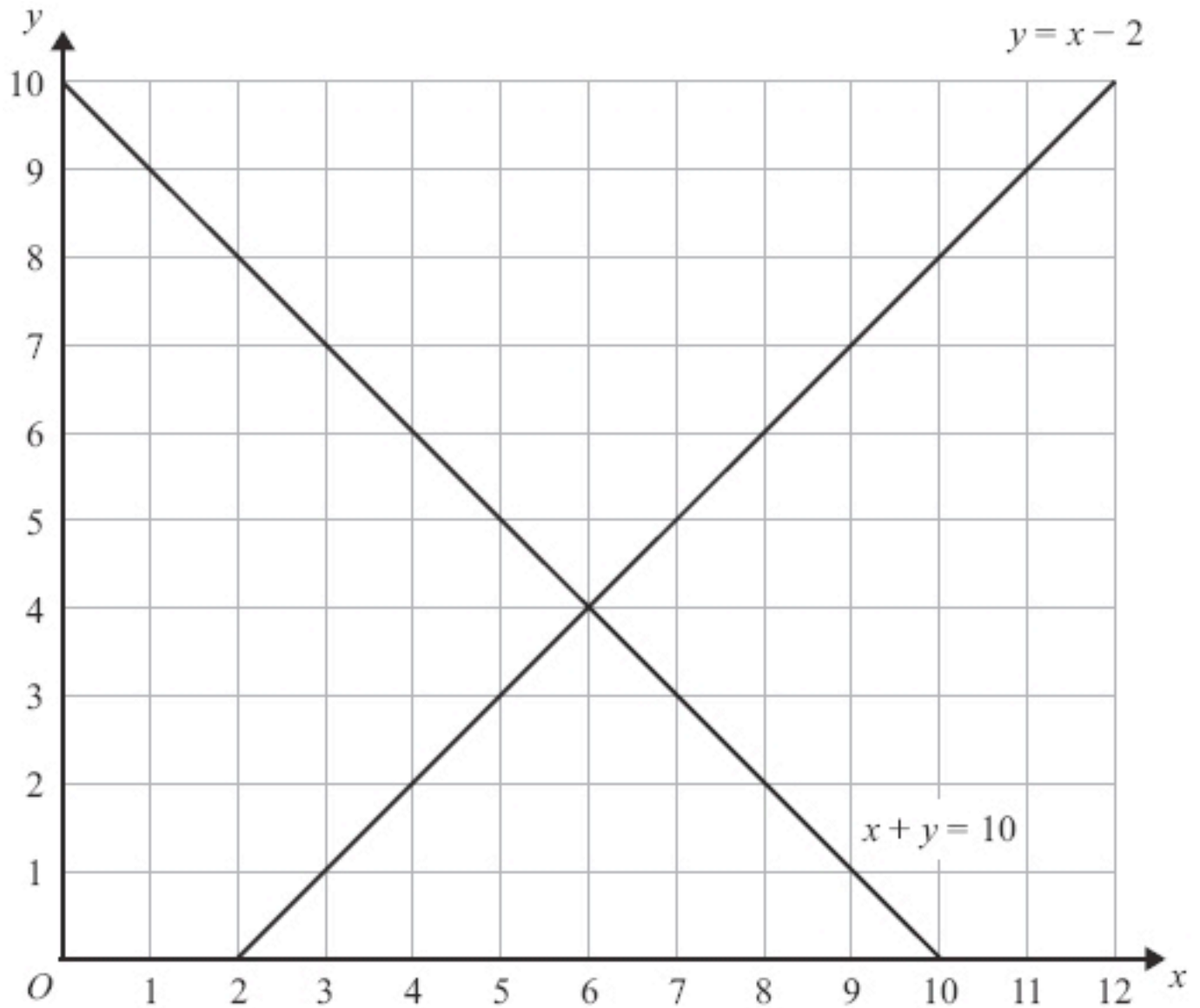
(b) On the grid below show, by shading, the region defined by the inequalities  
 $y \geq -1$        $y \leq 4 - x$        $y \leq 3x - 1$  (2)  
Mark this region with the letter R.



(4)  
(Total for question = 6 marks)

**Q4.**

The lines  $y = x - 2$  and  $x + y = 10$  are drawn on the grid.



On the grid, mark with a cross (✕) each of the points with integer coordinates that are in the region defined by

$$\begin{aligned} y &> x - 2 \\ x + y &< 10 \\ x &> 3 \end{aligned}$$

**(Total for Question is 3 marks)**

**Q5.**

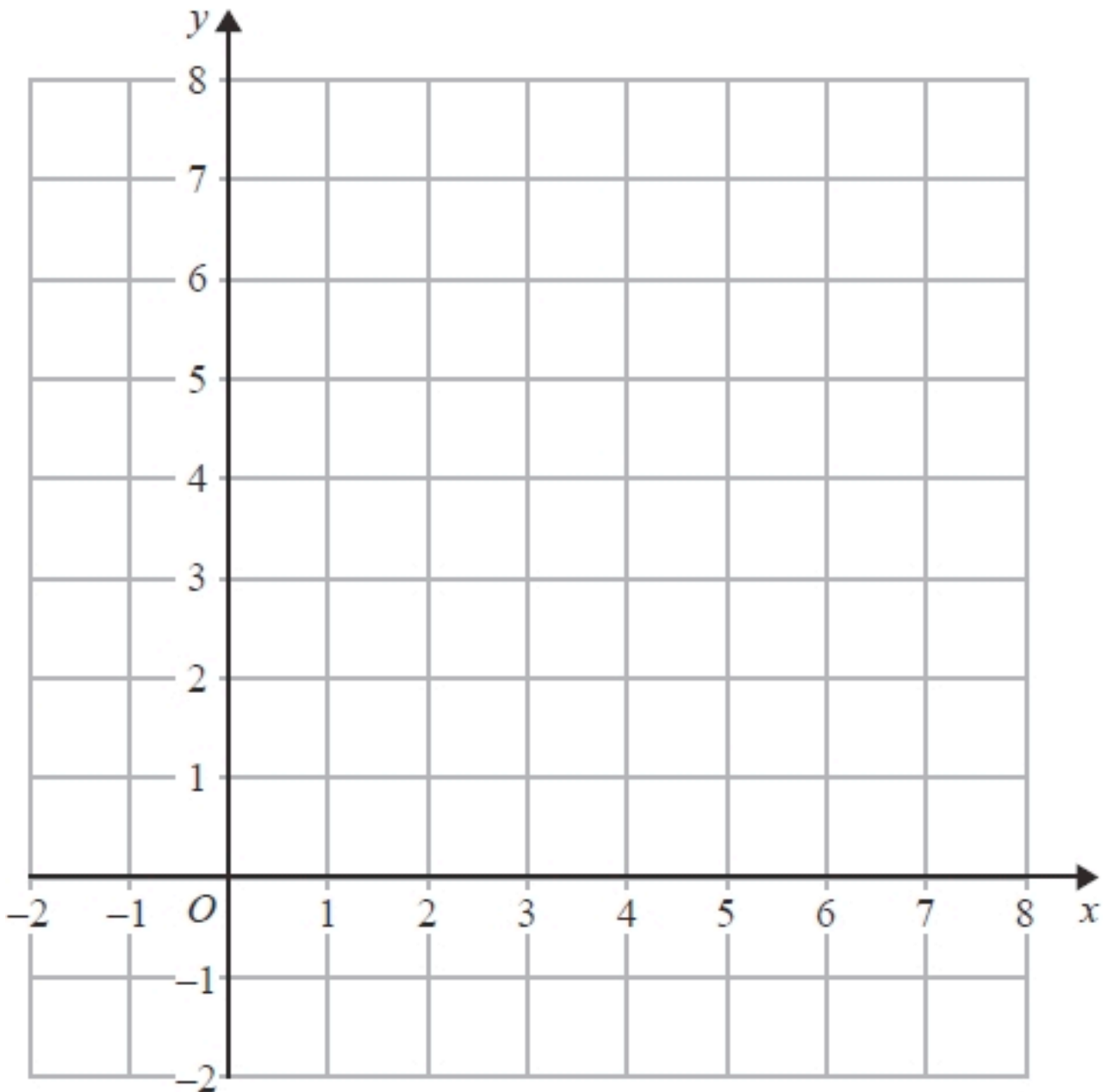
On the grid show, by shading, the region that satisfies all three of the inequalities

$$x + y < 7$$

$$y < 2x$$

$$y > 3$$

Label the region **R**.



(Total for question = 4 marks)