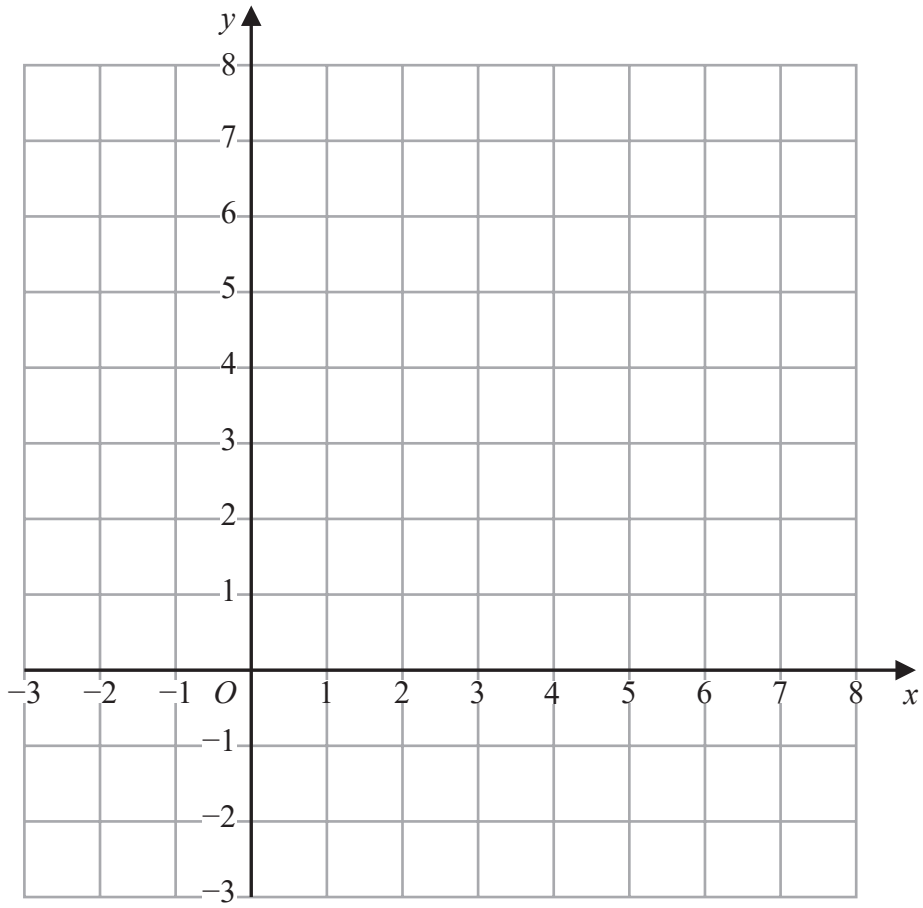
1 (a) On the grid show, by shading, the region that satisfies all these inequalities.

$x \geqslant 0$ $x \leqslant 2$ $y \leqslant x + 3$ $2x + 3y \geqslant 6$

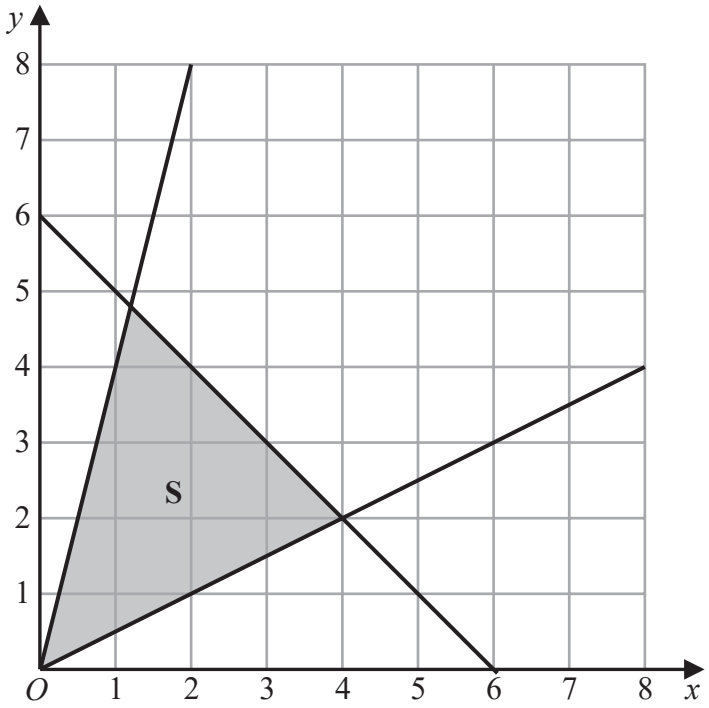
Label the region **R**.



(4)

(b) The diagram below shows the region **S** that satisfies the inequalities

$$y \leqslant 4x \qquad y \geqslant \frac{1}{2}x \qquad x + y \leqslant 6$$



Geoffrey says that the point with coordinates (2, 4) does not satisfy all the inequalities because it does not lie in the shaded region.

Is Geoffrey correct?
You must give a reason for your answer.

.....

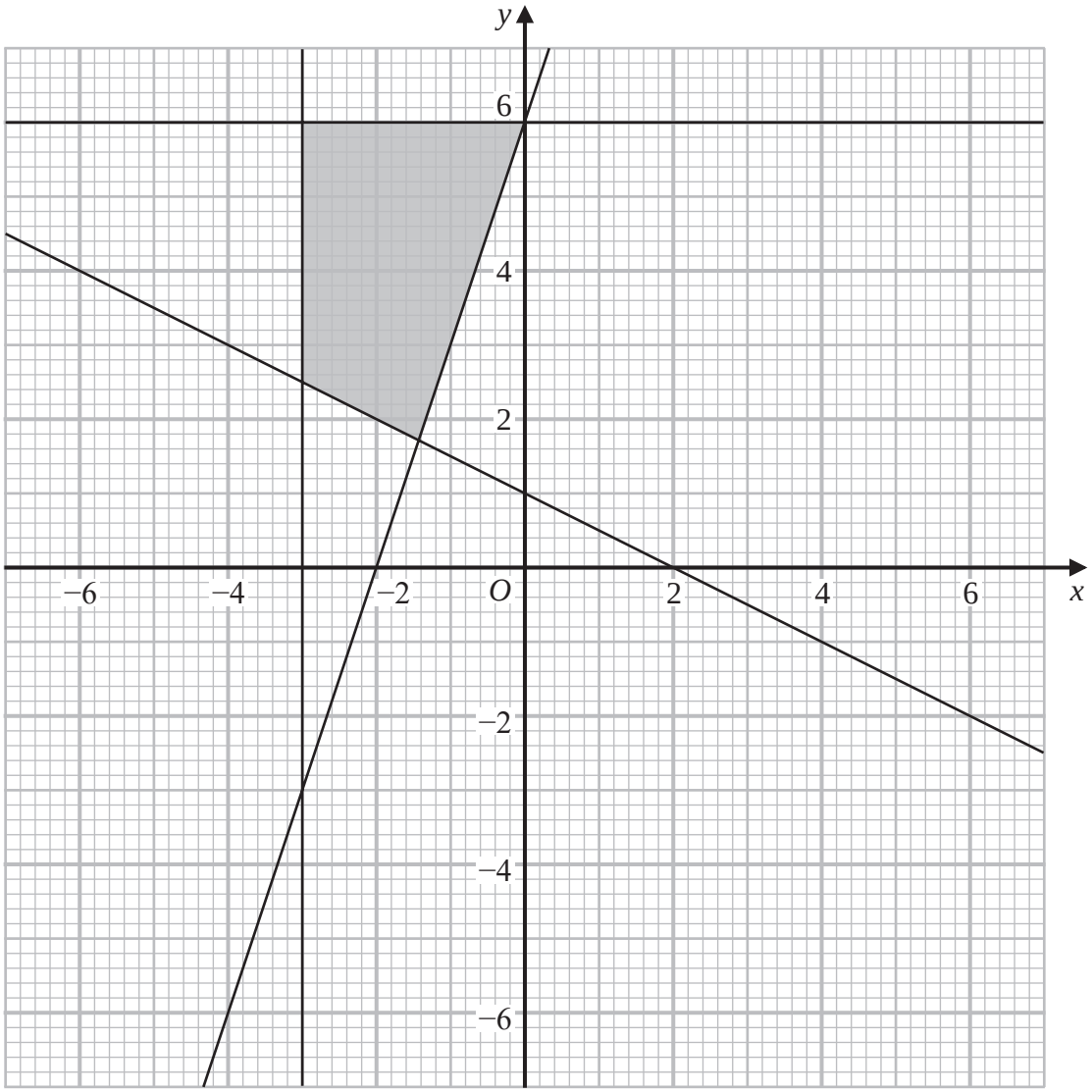
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(1)

(Total for Question 1 is 5 marks)

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



Find the four inequalities that define the shaded region.

.....

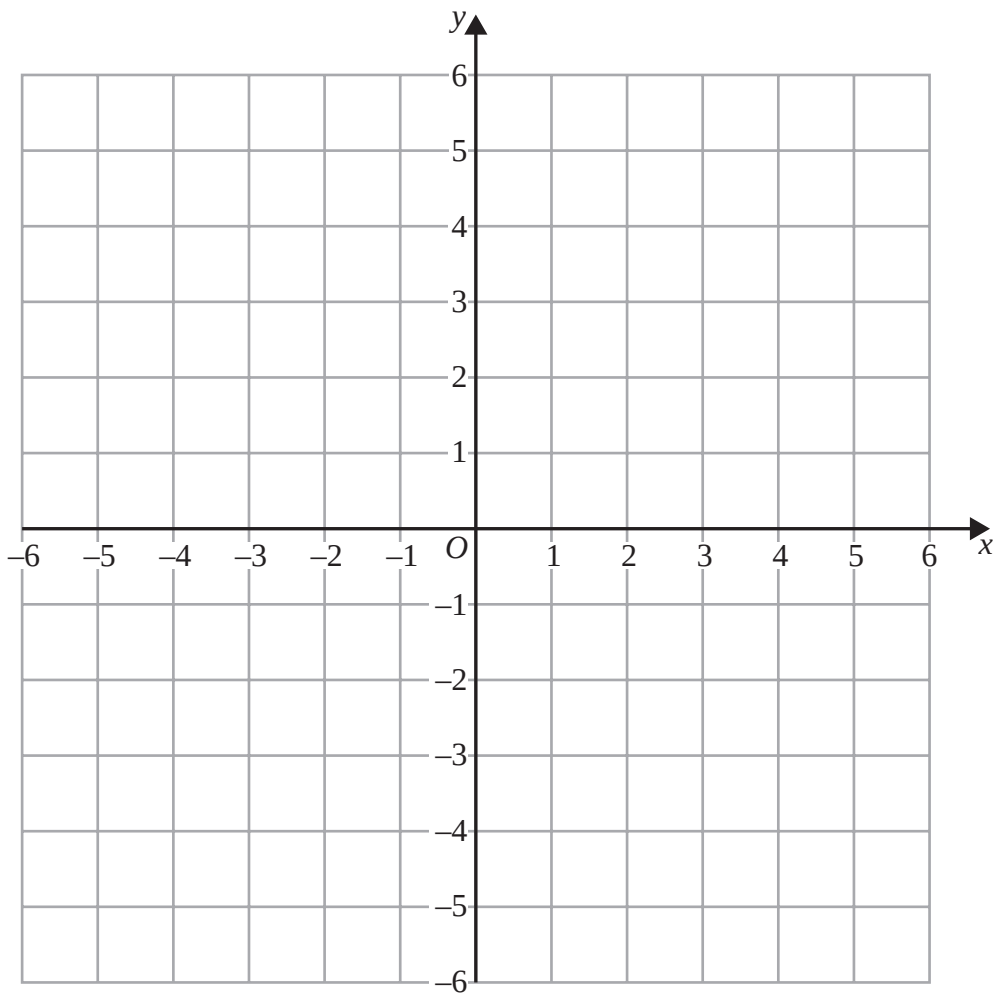
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(Total for Question 2 is 4 marks)

3



On the grid, shade the region **R** that satisfies all the following inequalities.

$x \leqslant 2$ $y \geqslant -3$ $y \leqslant 2x + 1$ $3x + 2y \leqslant 6$

Label the region **R**.

(Total for Question 3 is 3 marks)