

INEQUALITY GRAPHS

[ESTIMATED TIME: 45 minutes]

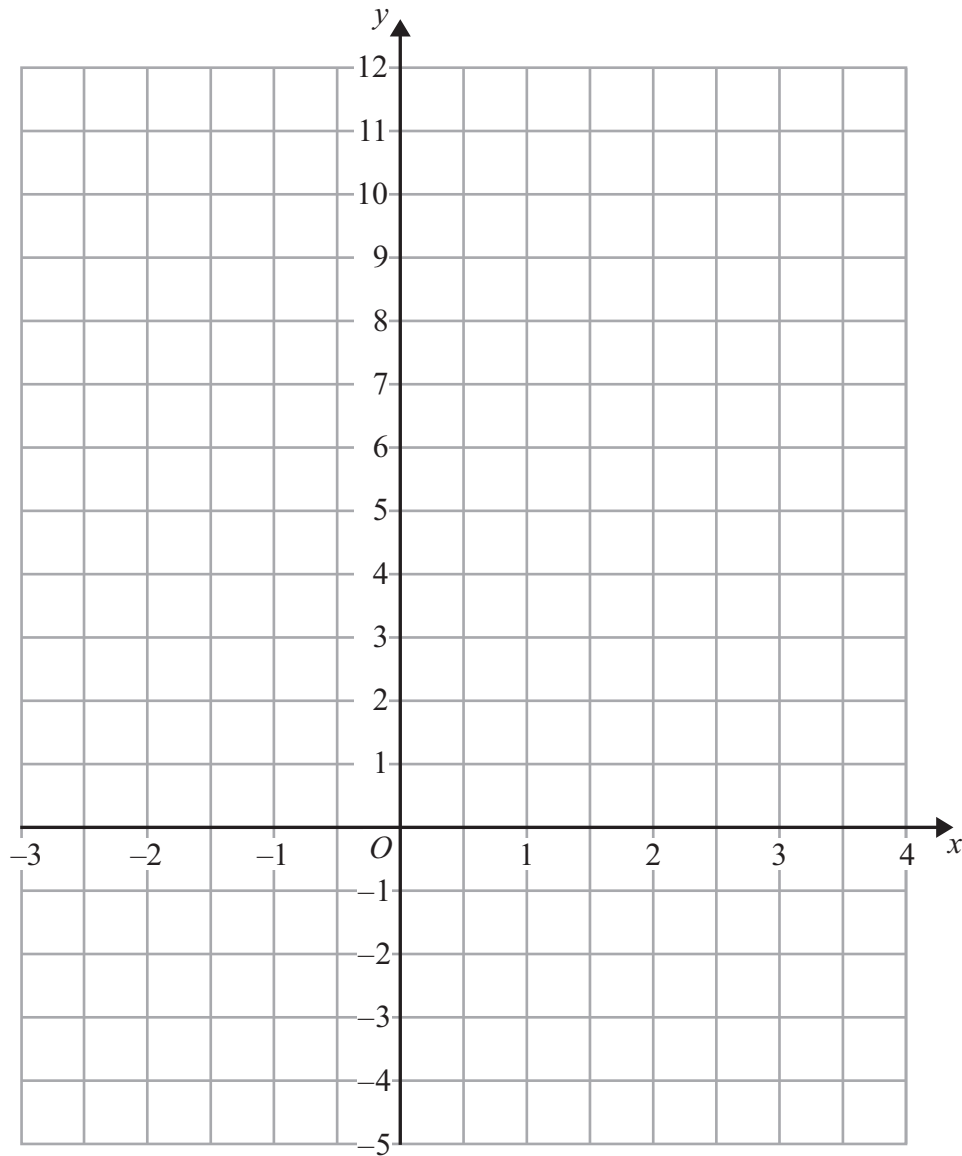
GCSE

(+ IGCSE) EXAM QUESTION PRACTICE

1.

[5 marks]

(a) On the grid, draw the graph of $y = 3x + 2$ for values of x from -2 to 3



(3)

(b) Mark with a cross (\times) a point on the grid that satisfies both the inequalities

$$x > 2 \text{ and } y > 3x + 2$$

Label this point P .

(2)



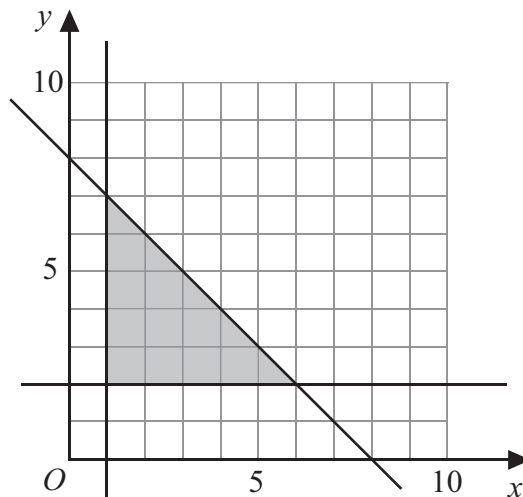
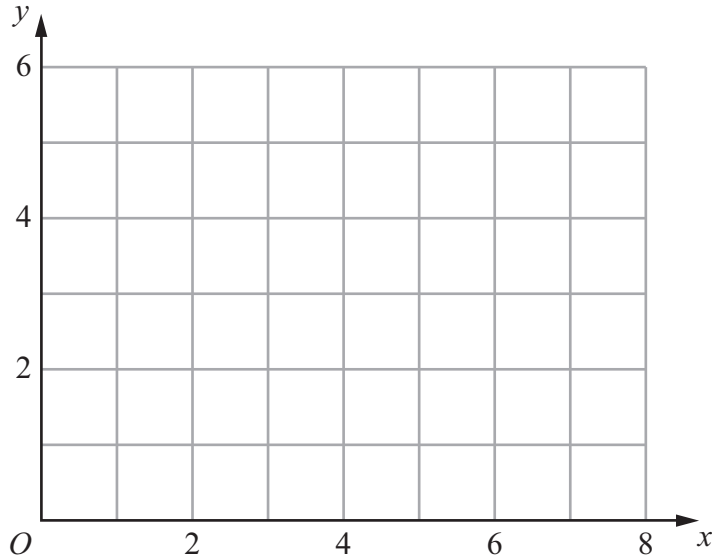
Show, by shading on the grid, the region defined by all three of the inequalities

$$x \leq 5$$

$$y \geq 3$$

$$y \leq x$$

Label your region **R**.



Write down the 3 inequalities that define the shaded region.

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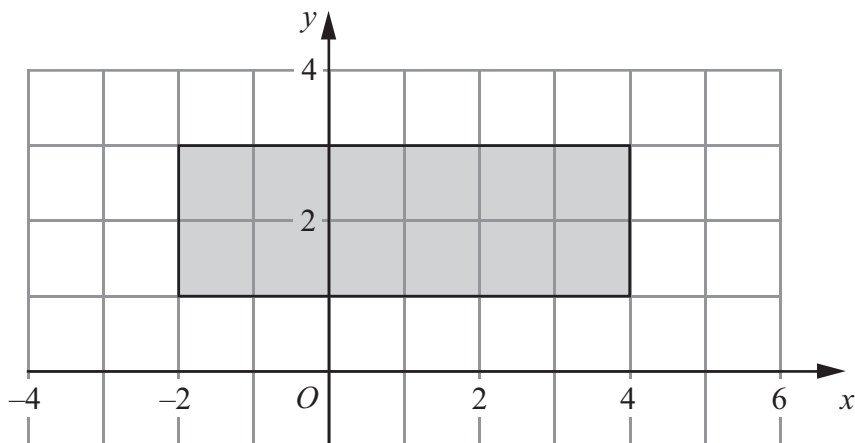
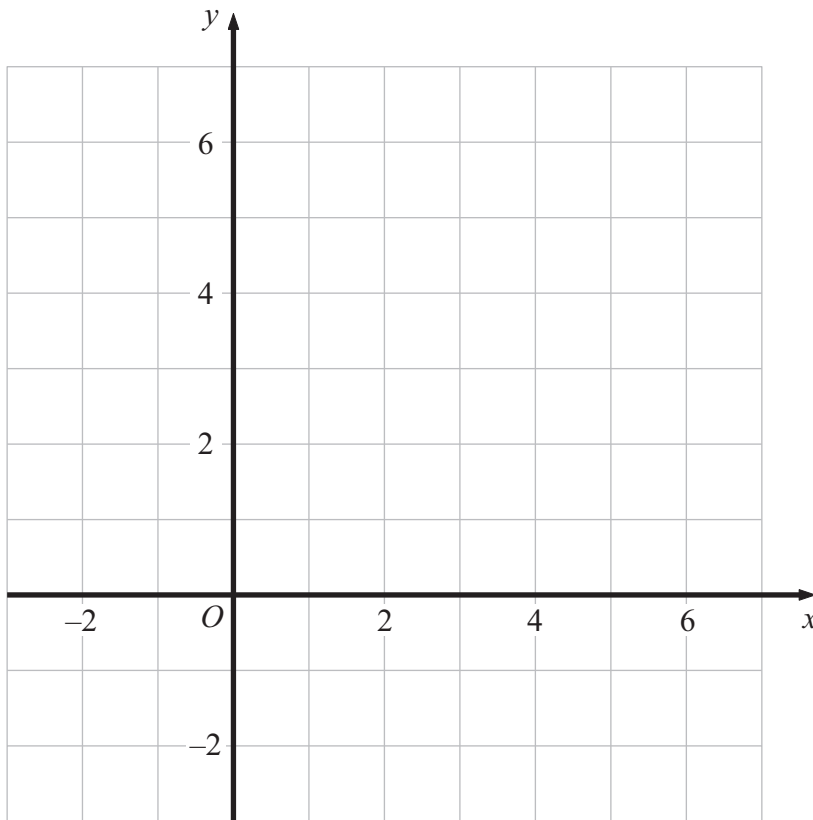
(3)



Show, by shading on the grid, the region which satisfies all three of these inequalities.

$$y \leq 5 \quad y \leq 2x \quad y \geq x + 1$$

Label your region **R**.



Write down inequalities to fully define the shaded region.

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(3)

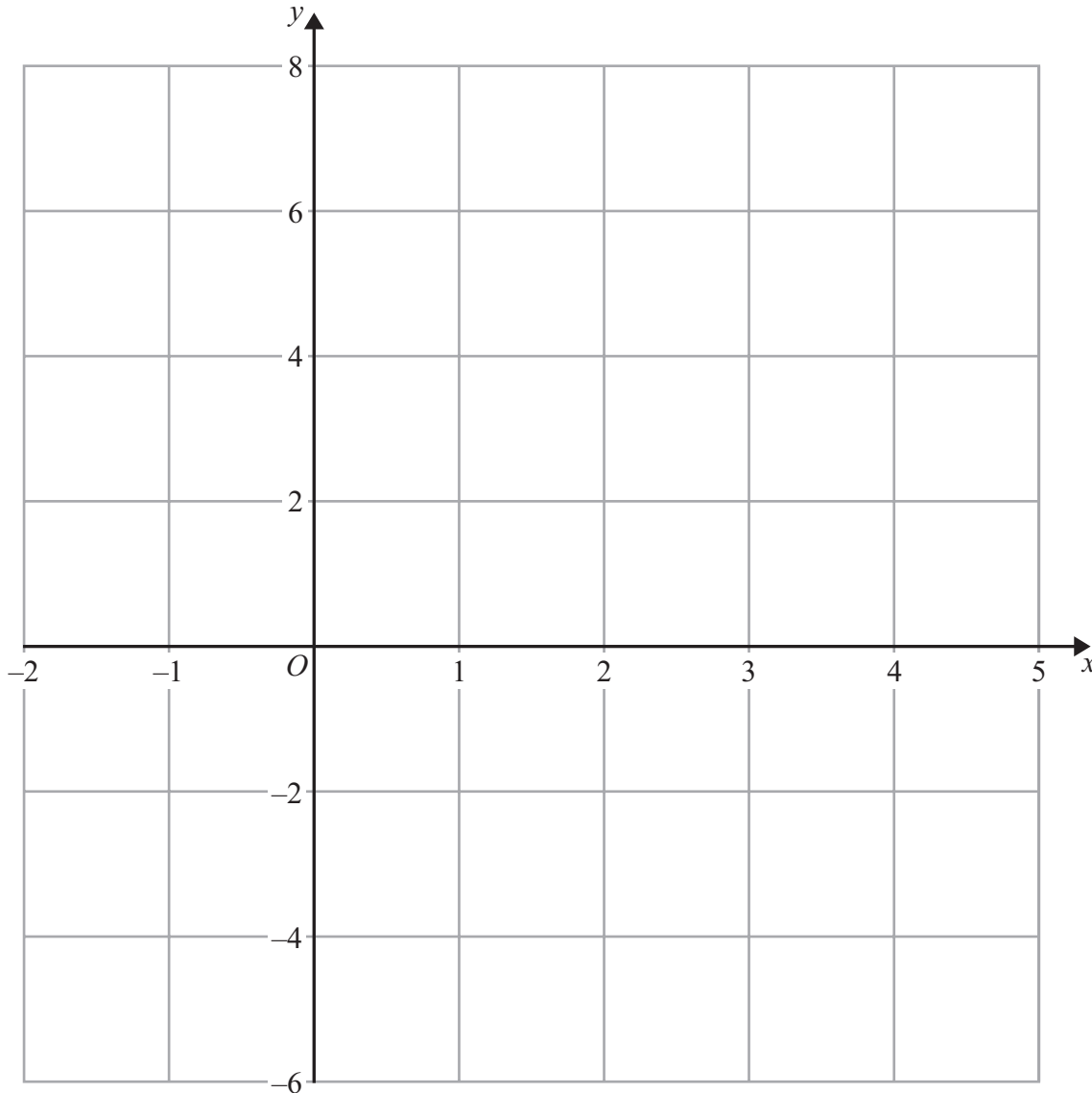
(a) Complete the table of values for $2x + y = 4$

x	-1	2	4
y			

(2)

(b) On the grid, draw the graph of $2x + y = 4$ for values of x from -1 to 4

(2)



(c) Show, by shading on the grid, the region which satisfies **all three** of the inequalities

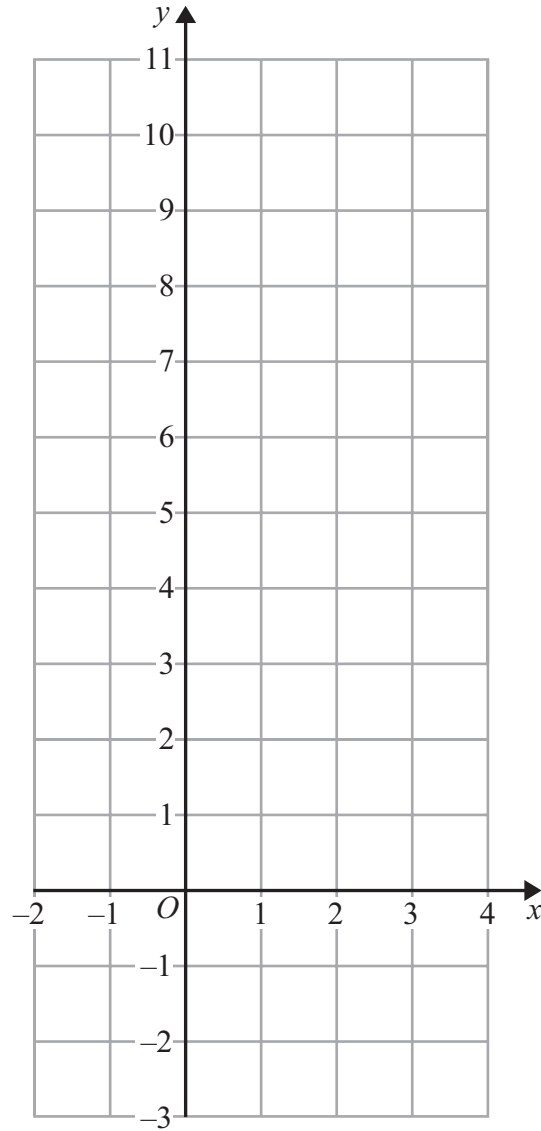
$$x \geq -1, \quad y \geq 2 \quad \text{and} \quad 2x + y \leq 4$$

Label the region **R**.

(2)



(a) On the grid, draw the graph of $y = 2x + 3$ for values of x from -2 to 4



(3)

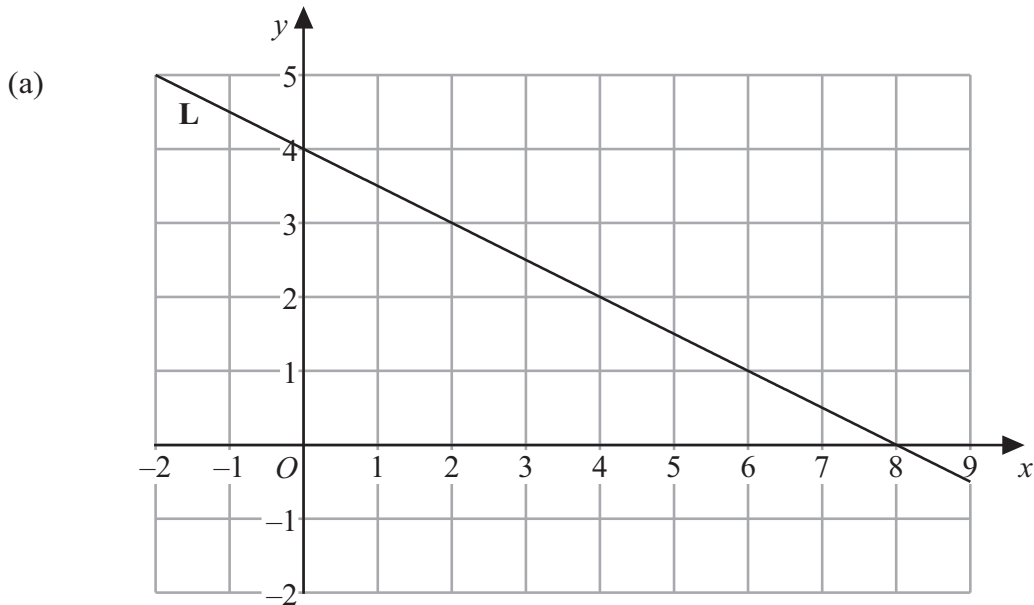
(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities

$$x \leq 3 \quad \text{and} \quad y \geq 2 \quad \text{and} \quad y \leq 2x + 3$$

Label your region **R**.

(2)

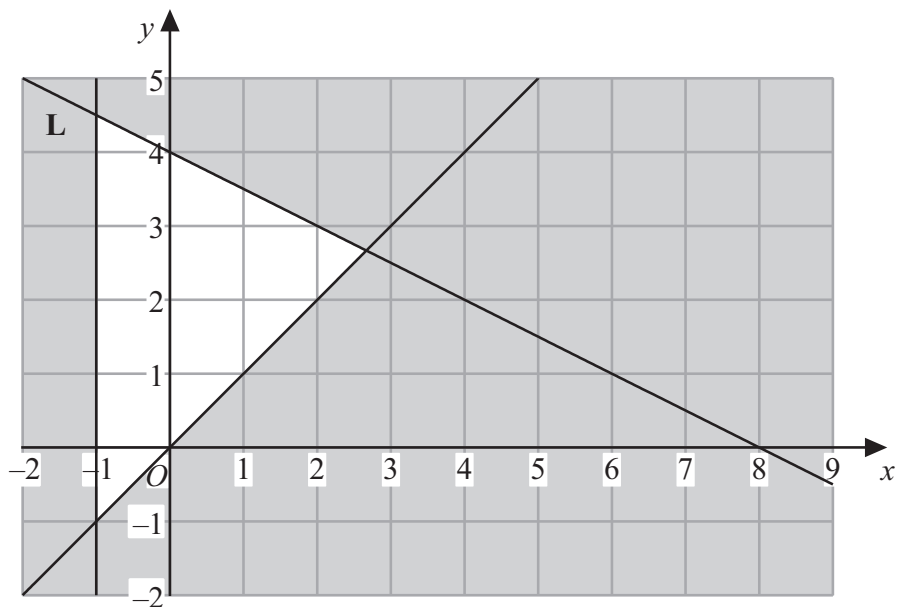




Find the equation of the line **L**.

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(3)

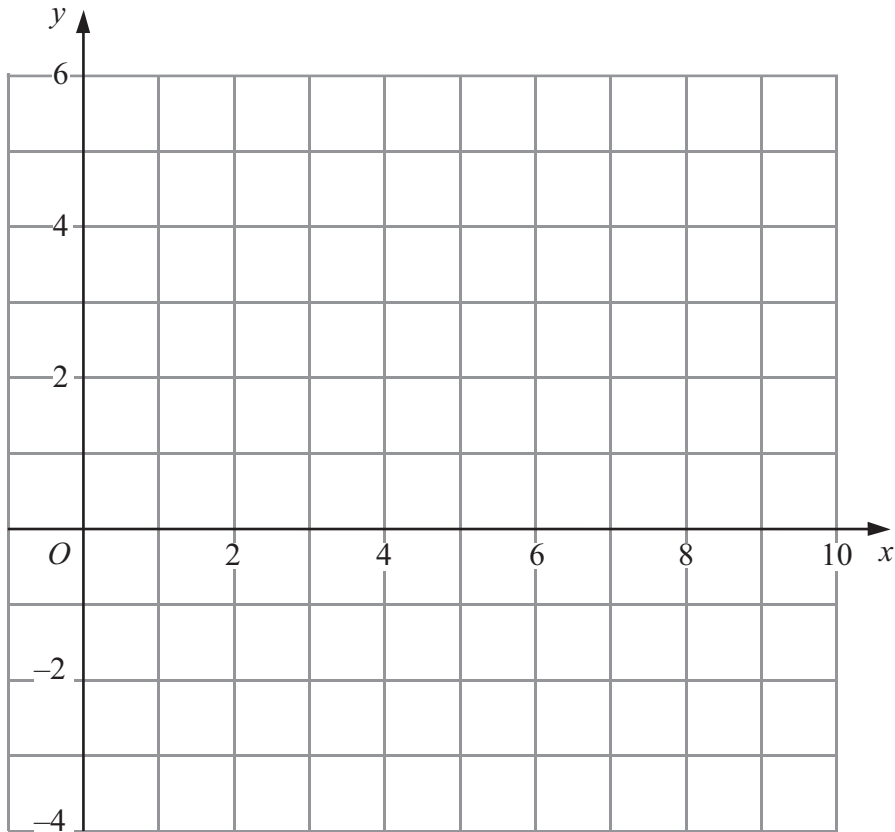
(b) Find the three inequalities that define the **unshaded** region in the diagram below.



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.....
(3)



(a) On the grid, draw the graph of $2x - 3y = 6$ from $x = 0$ to $x = 9$

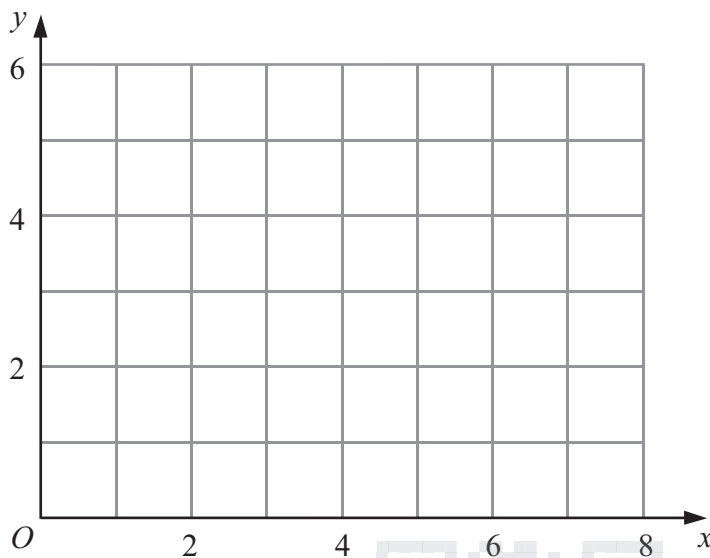


(2)

(b) On the grid, show by shading the region which satisfies the inequalities

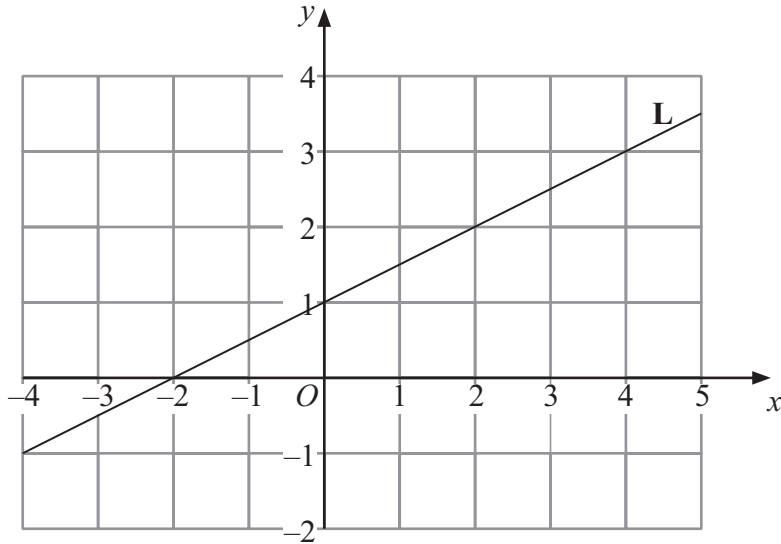
$$3 \leq x \leq 6 \quad \text{and} \quad 2 \leq y \leq 4$$

Label your region **R**.



(3)

A line **L** passes through the points (0, 1) and (4, 3).



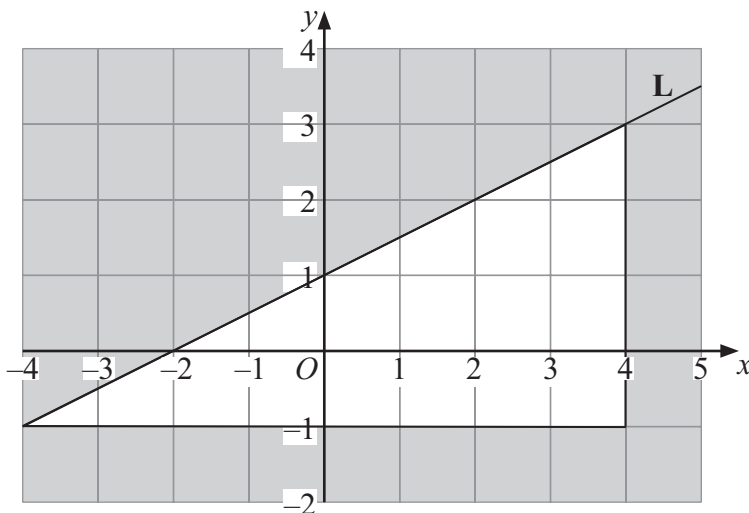
(a) (i) Find the gradient of the line **L**.

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(ii) Find the equation of the line **L**.

.....

(b)



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

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(3)

