

# 3.3

# Inequality Regions

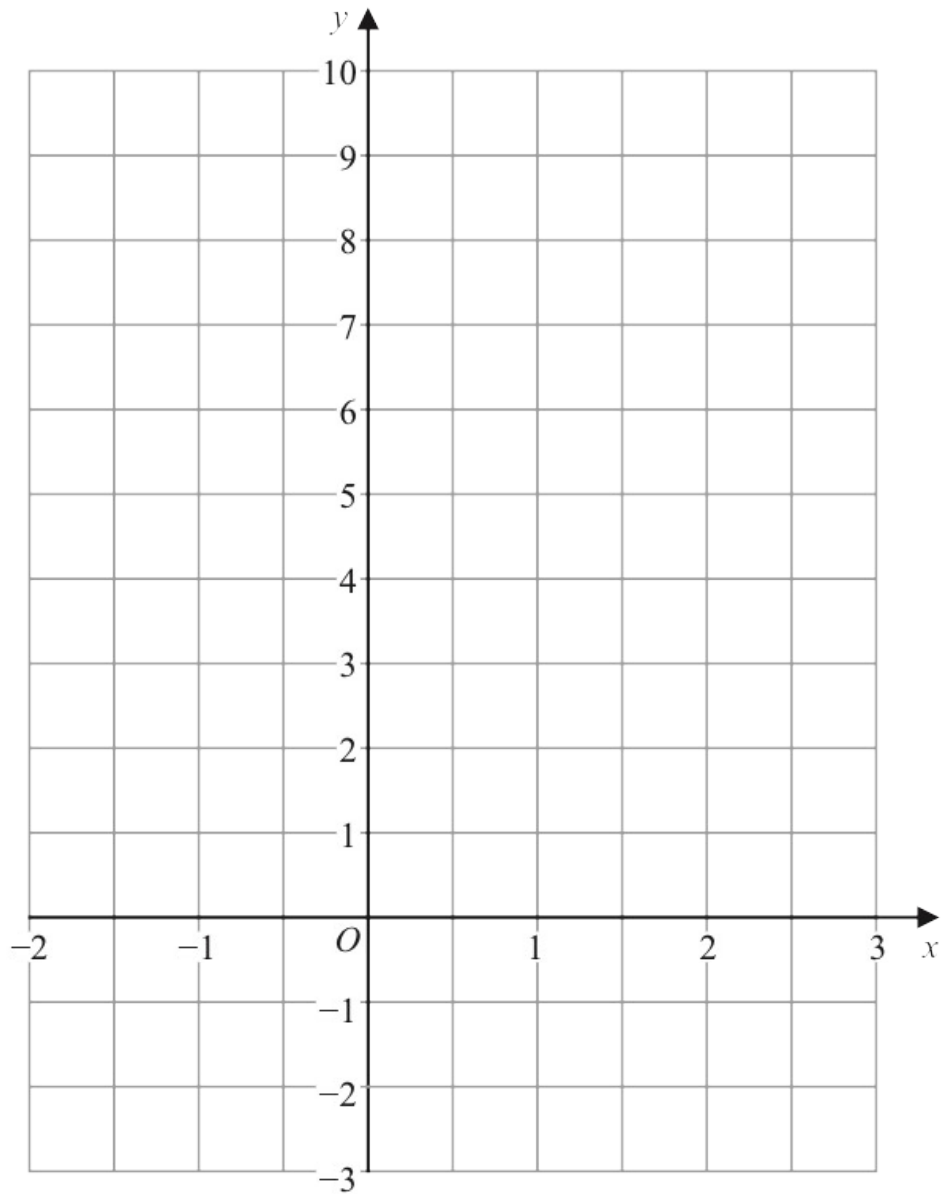
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19 (a) On the grid, draw the graph of  $y = 2x + 3$  for values of  $x$  from  $-2$  to  $3$



(3)

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

$$x \leq 2$$

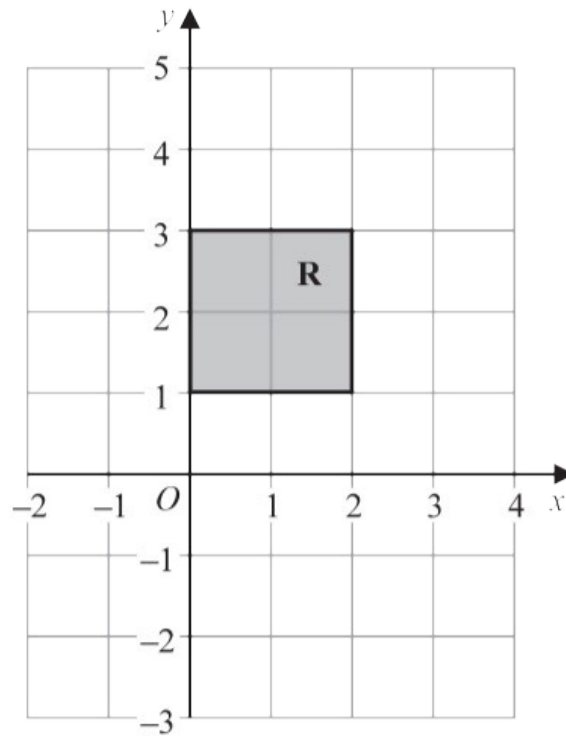
$$y \geq 1$$

$$y \leq 2x + 3$$

Label the region **R**.

(2)

(b)



The region **R**, shown shaded in the diagram, is bounded by four straight lines.

Write down the inequalities that define **R**.

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(2)

The region **R**, shown shaded in the diagram, is bounded by three straight lines.

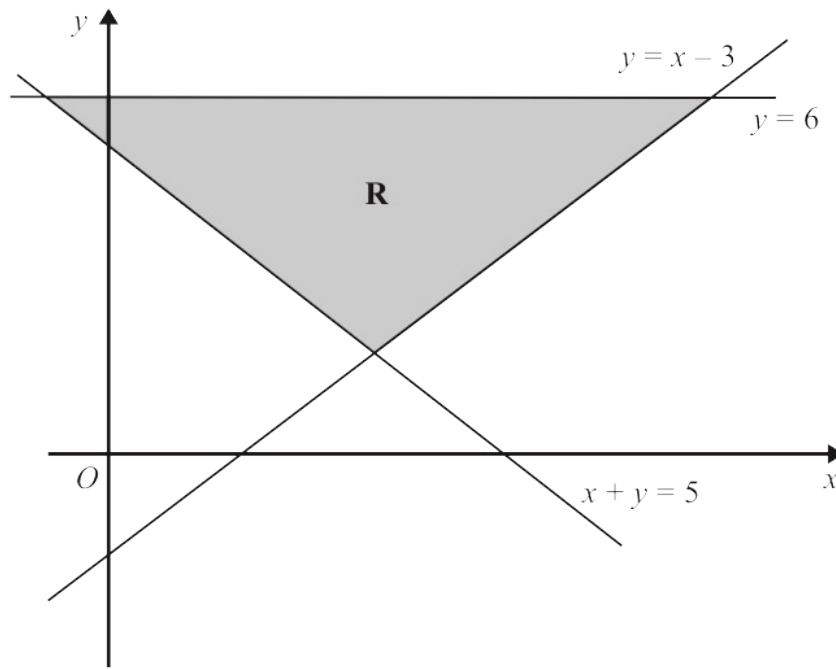


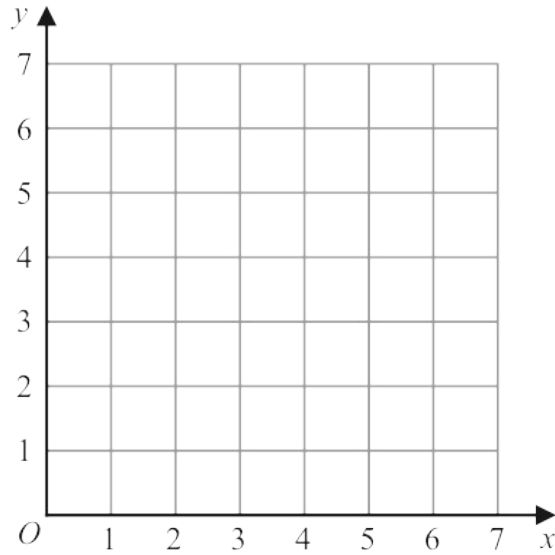
Diagram **NOT** accurately drawn

(b) Write down the three inequalities that define the region **R**.

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.....

(2)

18



(a) On the grid, draw and **label** the straight line with equation

(i)  $x = 1.5$

(ii)  $y = x$

(iii)  $x + y = 6$

(3)

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

$$x \geq 1.5$$

$$y \geq x$$

$$x + y \leq 6$$

Label the region **R**.

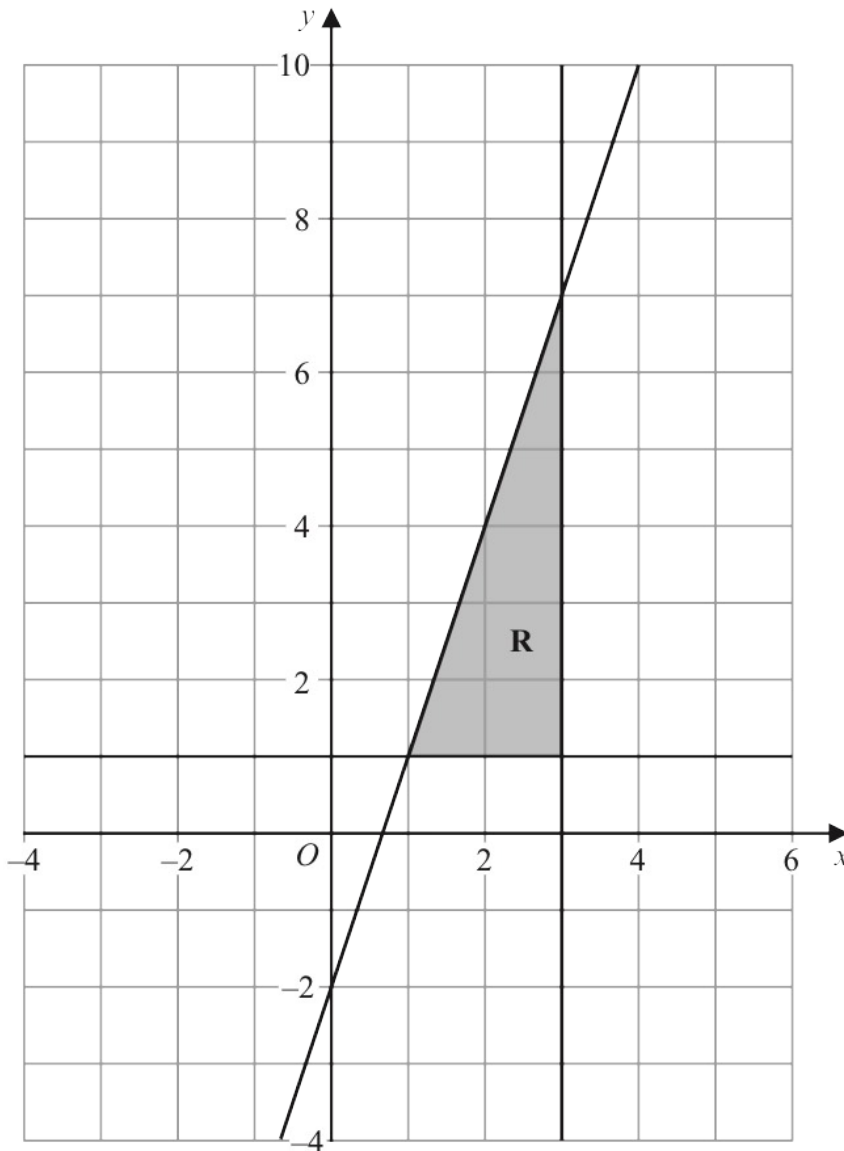
(1)

**(Total for Question 18 is 4 marks)**

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- 18 The shaded region **R**, shown in the diagram below, is bounded by the straight line with equation  $y = 3x - 2$  and by two other straight lines.

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



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(Total for Question 18 is 3 marks)

- 24 (a) Write down an equation of the straight line with gradient  $-3$  and which passes through the point with coordinates  $(0, 5)$

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(2)

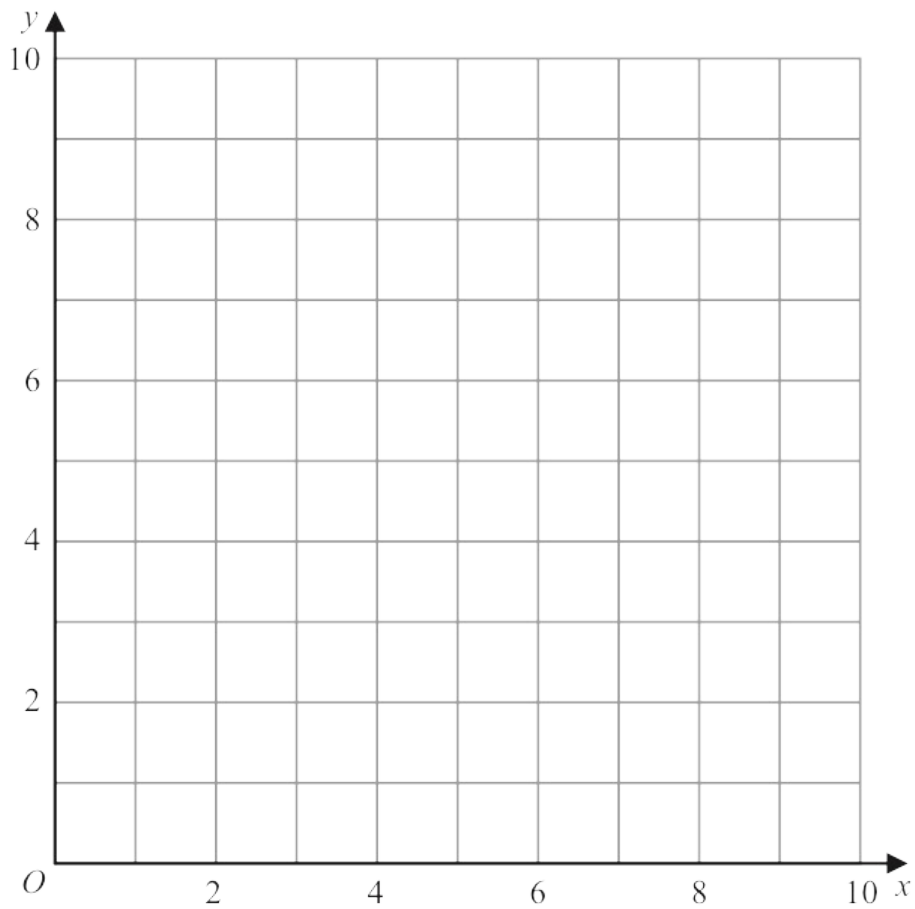
- (b) Show, by shading on the grid, the region defined by **all three** of the inequalities

$$x \leq 6$$

$$y \geq 2$$

$$y \leq x + 1$$

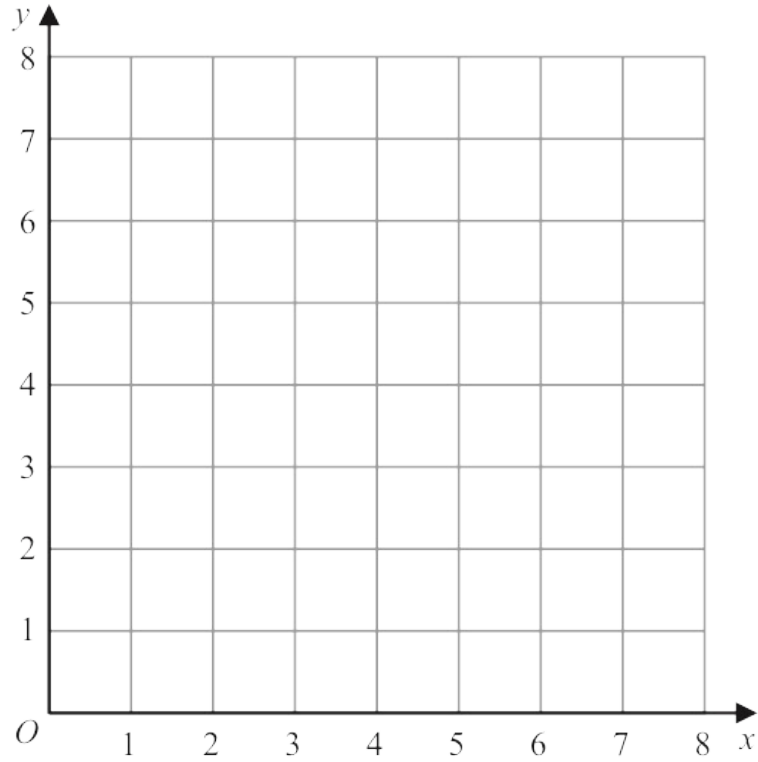
Label the region **R**



(3)

18 (a) On the grid, draw and label with its equation the straight line with equation

(i)  $y = 1$       (ii)  $x = 2$       (iii)  $x + y = 7$



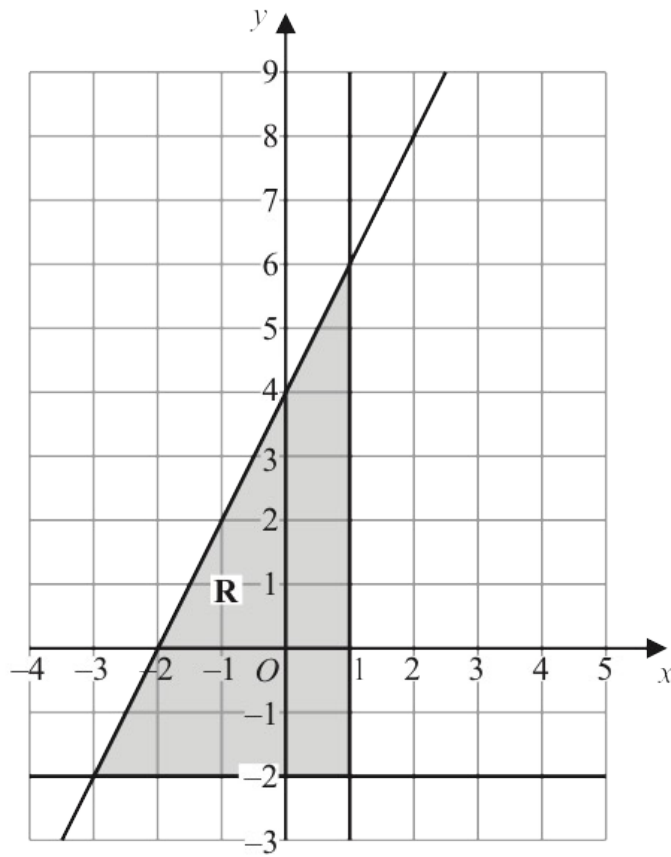
(3)

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

$y \geq 1$        $x \geq 2$        $x + y \leq 7$

Label the region **R**.

(1)



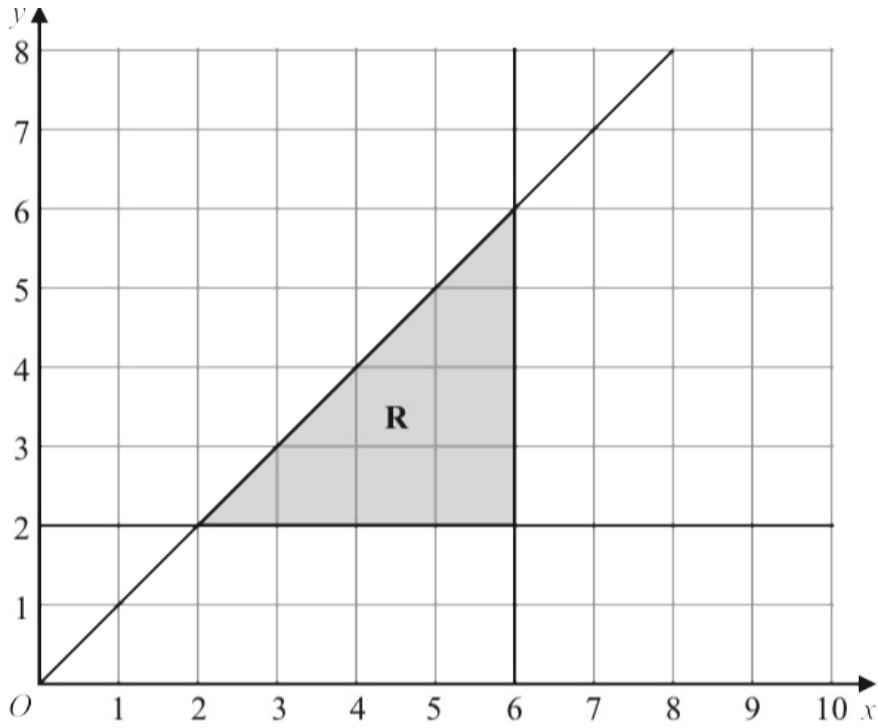
The region **R**, shown shaded in the diagram, is bounded by three straight lines.  
 Find the inequalities that define **R**

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(Total for Question 22 is 4 marks)



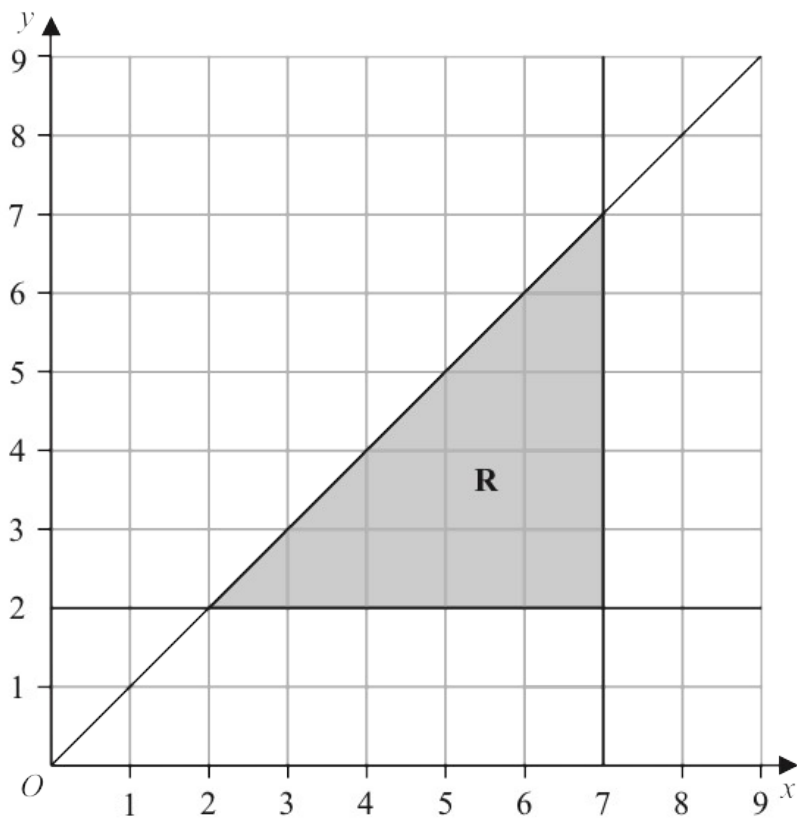
(b) Write down the three inequalities that represent the shaded region **R**

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 .....  
 .....

(3)

22

The region **R**, shown shaded in the diagram, is bounded by three straight lines.



(b) Write down the three inequalities that define the region **R**

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(3)