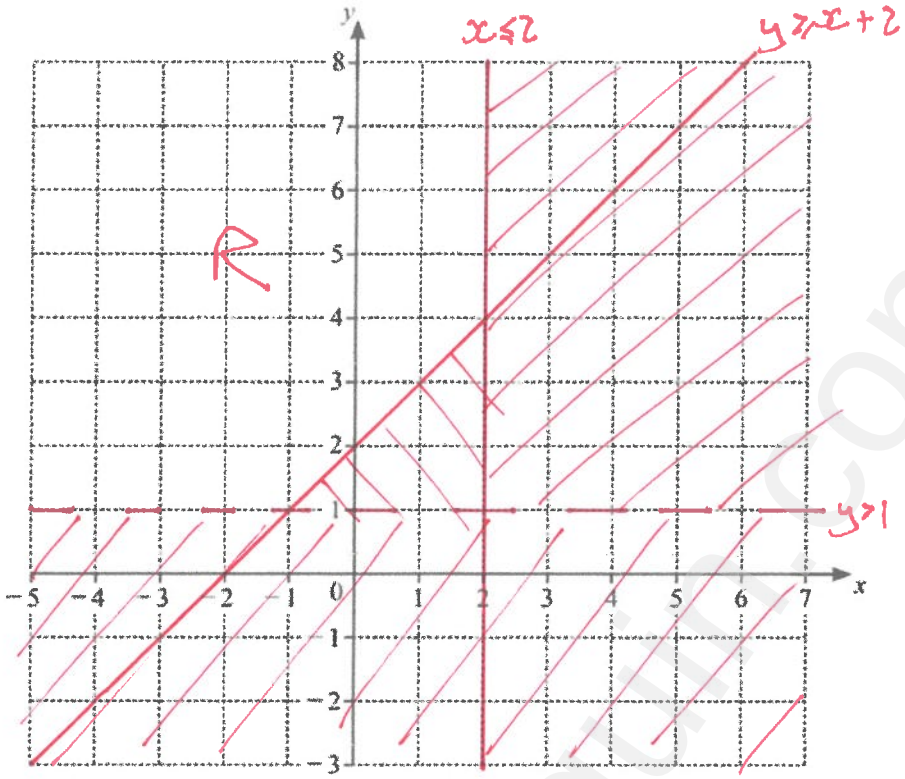
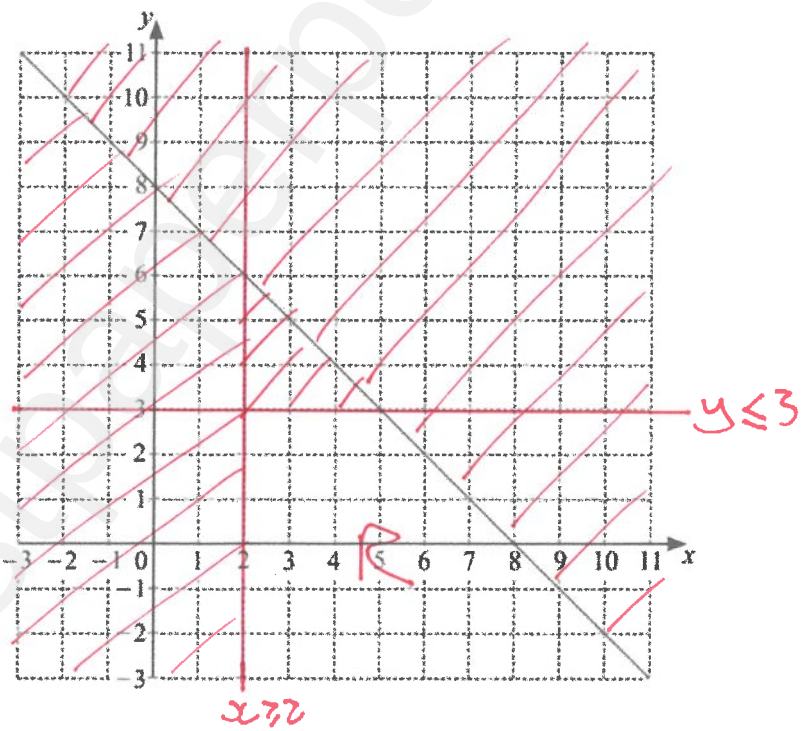
15



By shading the **unwanted** regions of the grid, draw and label the region R which satisfies these inequalities.

$y > 1$ $\quad x \leqslant 2$ $\quad y \geqslant x+2$

15



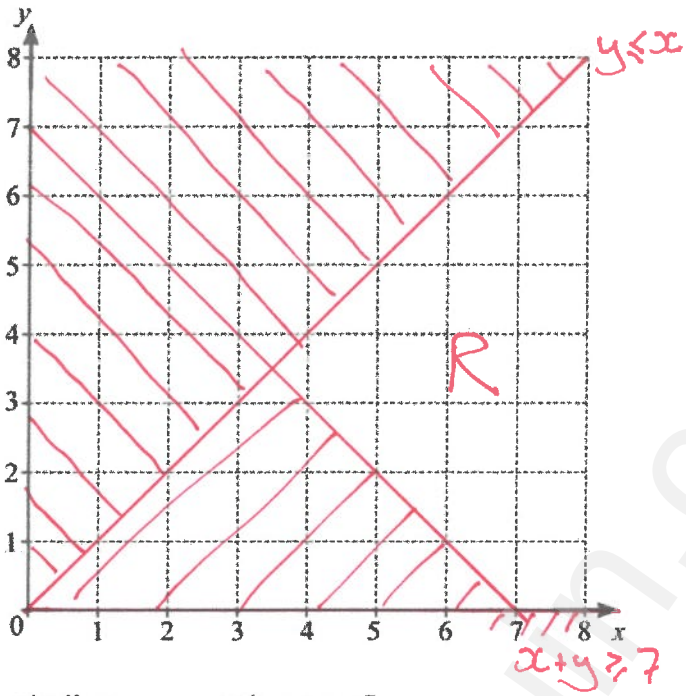
The diagram shows the line $x+y=8$.

On the diagram, show clearly the region defined by these inequalities.

$x+y \leqslant 8$ $\quad x \geqslant 2$ $\quad y \leqslant 3$

[2]

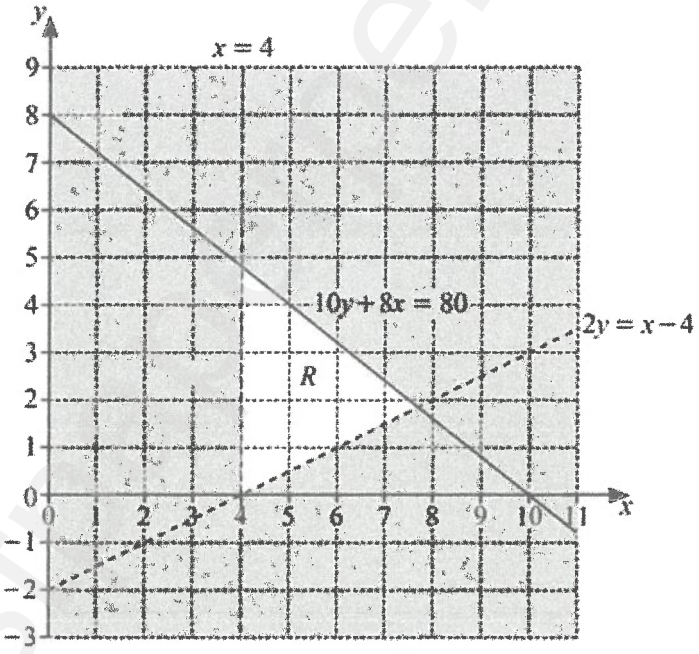
8



(a) On the grid, draw the lines $y = x$ and $x + y = 7$. [3]

(b) Region R satisfies the three inequalities $y \geqslant 0$, $y < x$ and $x + y \geqslant 7$.
On the grid, label the region R. [1]

(b)



The region marked *R* is defined by three inequalities.

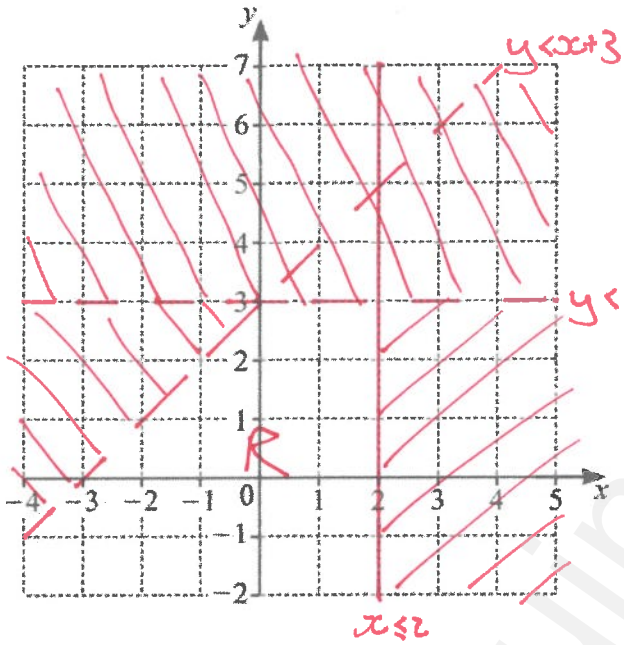
(i) Find these three inequalities.

$x > 4$

$2y > x - 4$

$10y + 8x \leq 80$ [3]

16

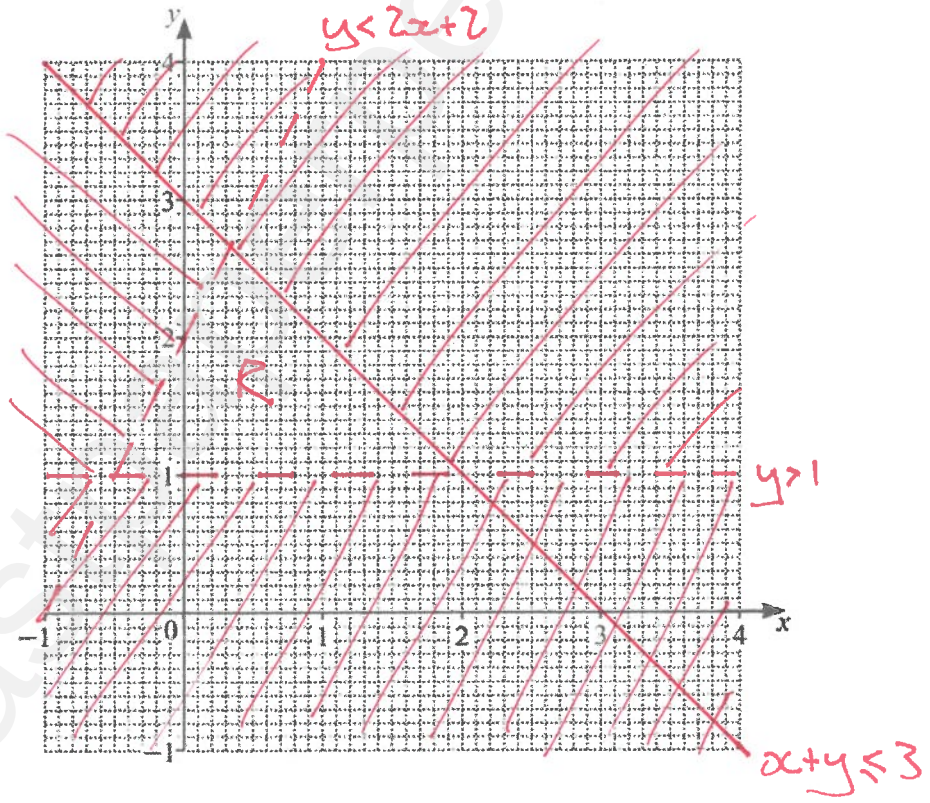


By shading the **unwanted** regions of the grid, draw and label the region R which satisfies these three inequalities.

$$y < 3 \qquad x \leqslant 2 \qquad y < x+3$$

[5]

16

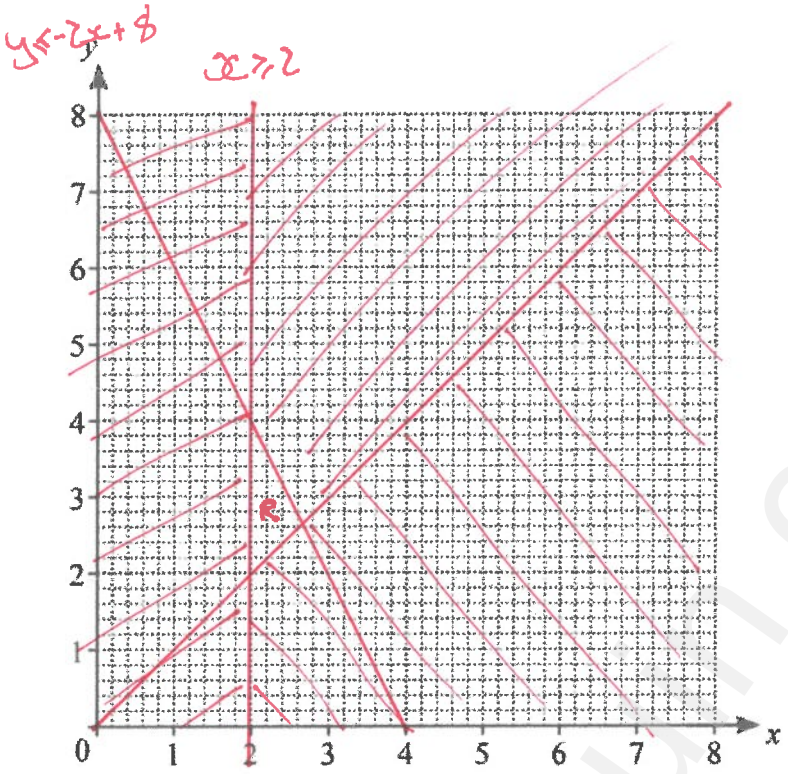


The region R satisfies these three inequalities.

$$y > 1 \qquad y < 2x+2 \qquad x+y \leqslant 3$$

By drawing three suitable lines, and shading unwanted regions, find and label the region R. [5]

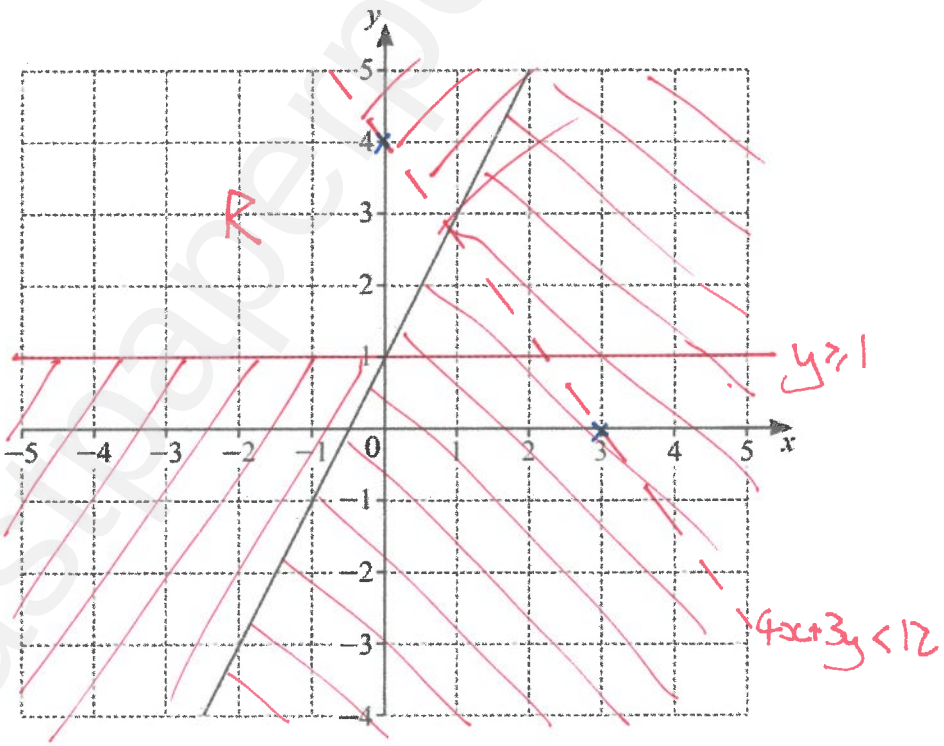
23



(a) By drawing suitable lines and shading unwanted regions, find the region, R, where

$$x \geqslant 2, \quad y \geqslant x \text{ and } 2x+y \leqslant 8.$$ [5]

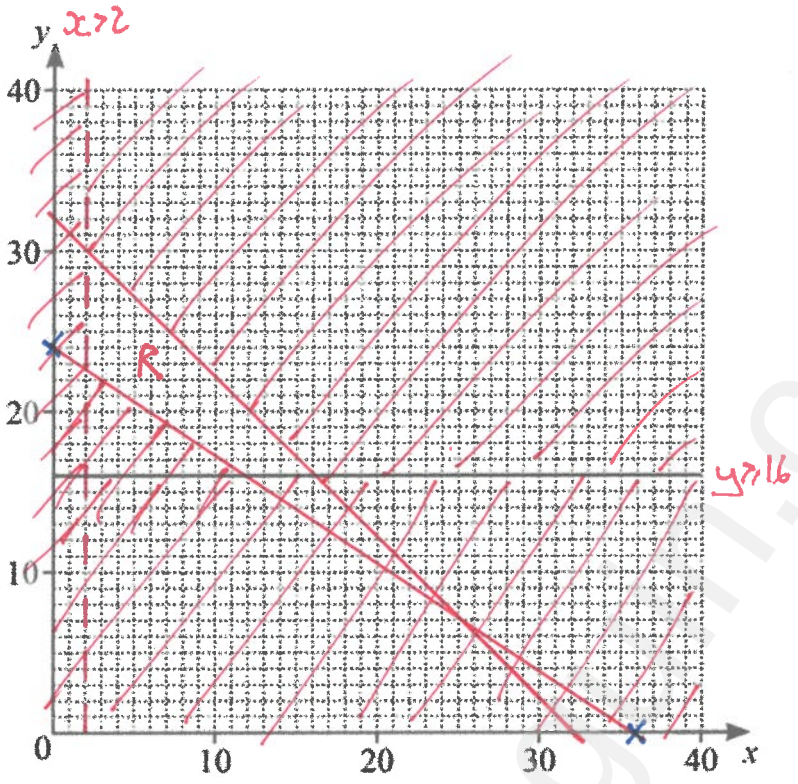
13 The graph of $y = 2x+1$ is drawn on the grid.



By shading the **unwanted** regions of the grid, find and label the region R which satisfies these inequalities.

$$y \geqslant 2x+1 \qquad y \geqslant 1 \qquad 4x+3y < 12$$ [4]

(c) The line $y = 16$ is drawn on the grid.



The region R satisfies the following inequalities.

$y \geqslant 16$ $\quad x > 2$ $\quad 2x + 3y \geqslant 72$ $\quad y \leqslant 32 - x$

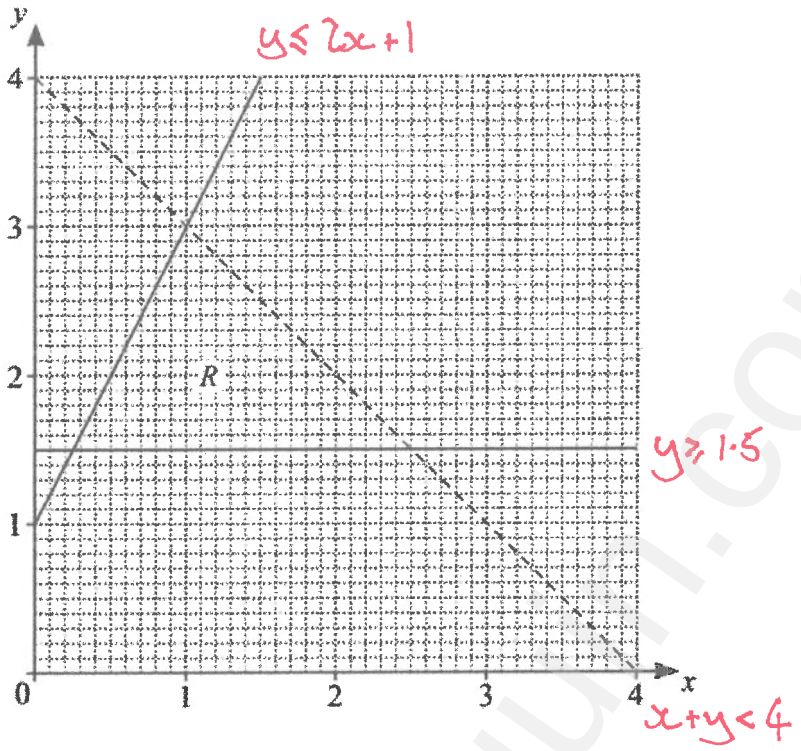
(i) By drawing three more lines and shading the region **not required**, find and label region R. [6]

$2x + 3y = 72$

$x = 0$: $3y = 72$, $y = 24$, $(0, 24)$

$y = 0$: $2x = 72$, $x = 36$, $(36, 0)$

13



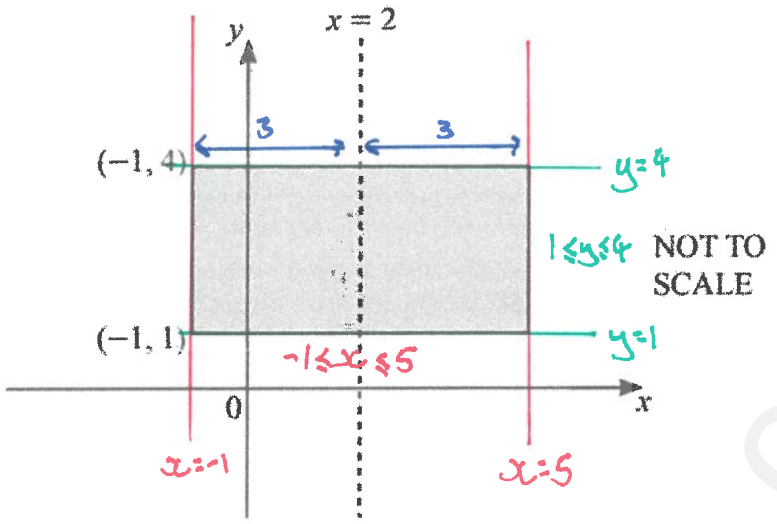
Write down the three inequalities that define the region R.

$y \geqslant 1.5$

$x + y < 4$

$y \leqslant 2x + 1$ [4]

11



The diagram shows a rectangle with a line of symmetry at $x = 2$.
Two vertices of the rectangle are at $(-1, 1)$ and $(-1, 4)$.

The shaded region is defined by the inequalities $a \leqslant x \leqslant b$ and $c \leqslant y \leqslant d$.

Find the values of a, b, c and d.

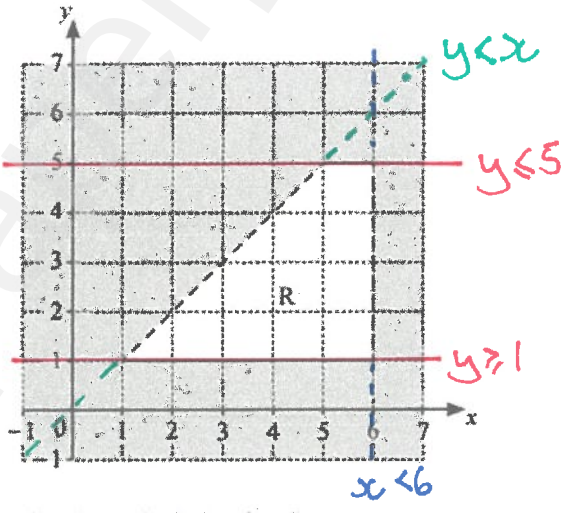
$a =$ -1

$b =$ 5

$c =$ 1

$d =$ 4 [2]

11

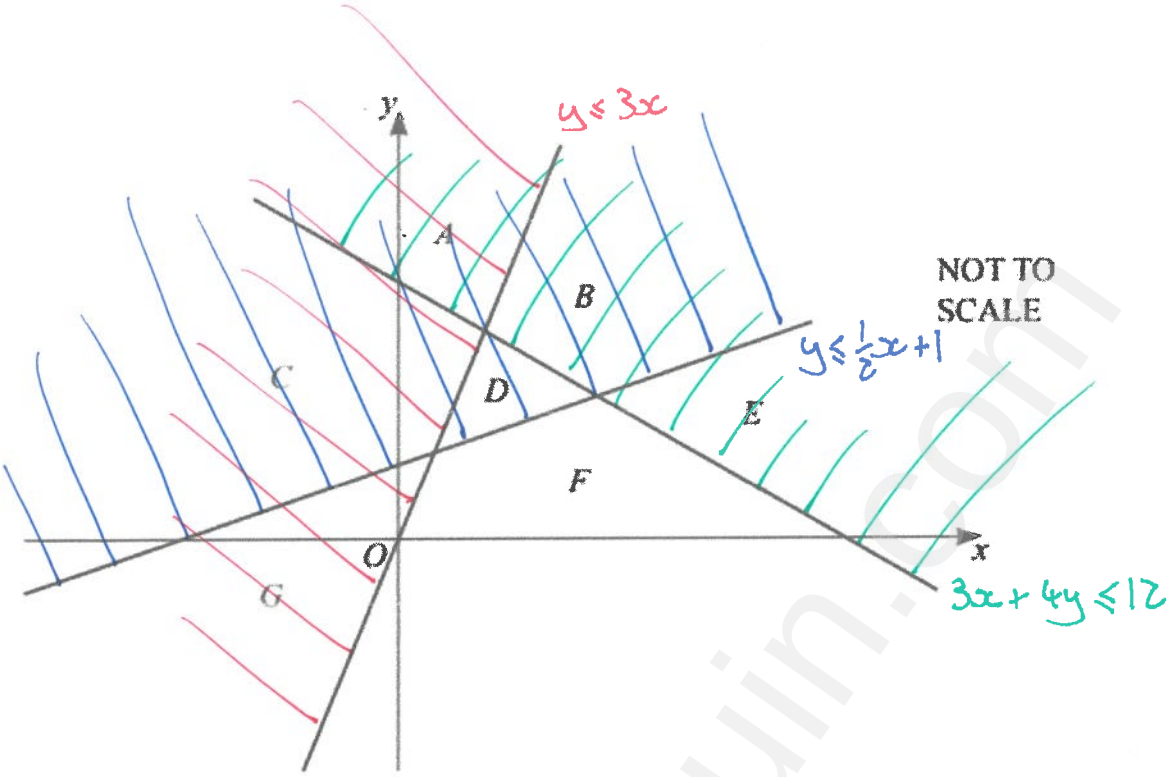


Find the inequalities that define the unshaded region, R.

$y \geq 1$, $y \leq 5$, $x < 6$, $y < x$ [4]

12

(a)



The diagram shows the lines $y = \frac{1}{2}x + 1$, $y = 3x$ and $3x + 4y = 12$.

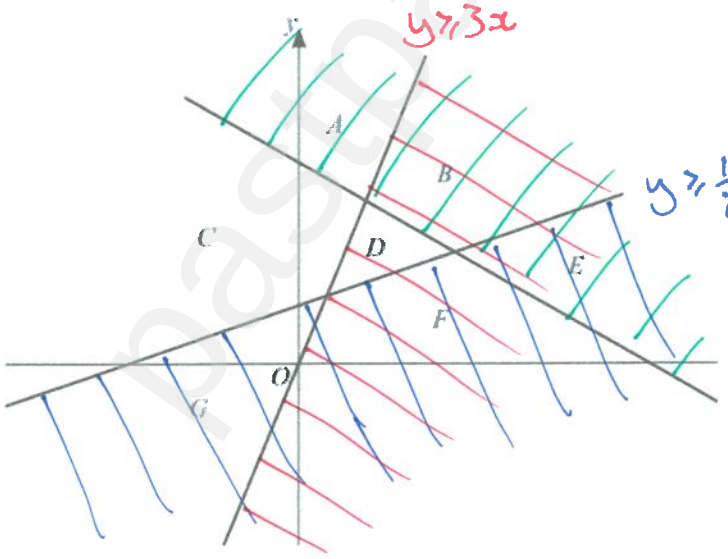
These lines divide the space into 7 regions, A, B, C, D, E, F, and G.

Write down the letter of the region which is defined by

(a) $y \leqslant \frac{1}{2}x + 1$, $y \leqslant 3x$ and $3x + 4y \leqslant 12$,

Region ..... F ..... [1]

(b) $y \geqslant \frac{1}{2}x + 1$, $y \geqslant 3x$ and $3x + 4y \leqslant 12$.



Region ..... C ..... [1]