Inequalities Graph Past Paper Questions Edexcel Maths IGCSE

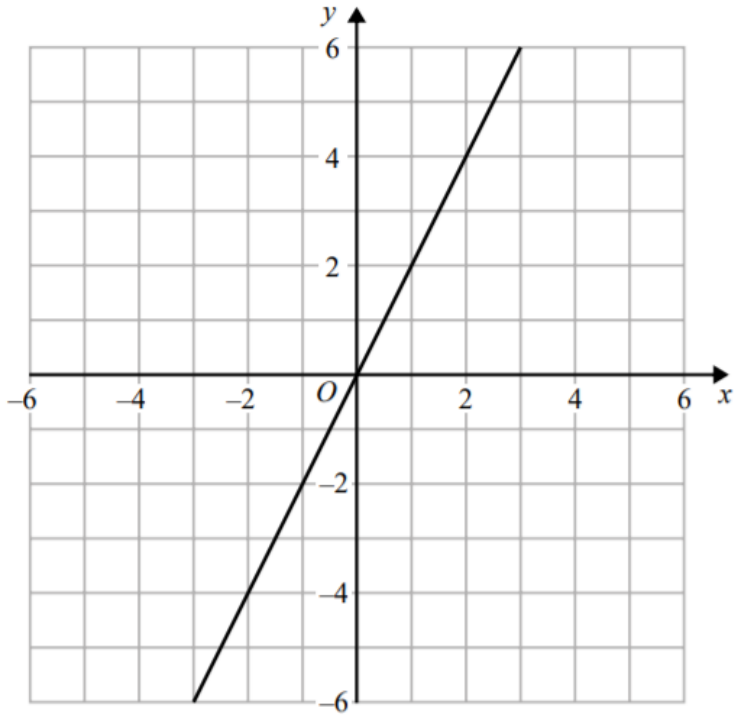
Higher- Calculator

1.

The line with equation $y = 2x$ is drawn on the grid.

(a) On the same grid, draw the line with equation $4x + 3y = 12$

(2)



(b) Show, by shading on the grid, the region defined by all four inequalities

$$y \leqslant 2x$$

$$4x + 3y \leqslant 12$$

$$y \geqslant -3$$

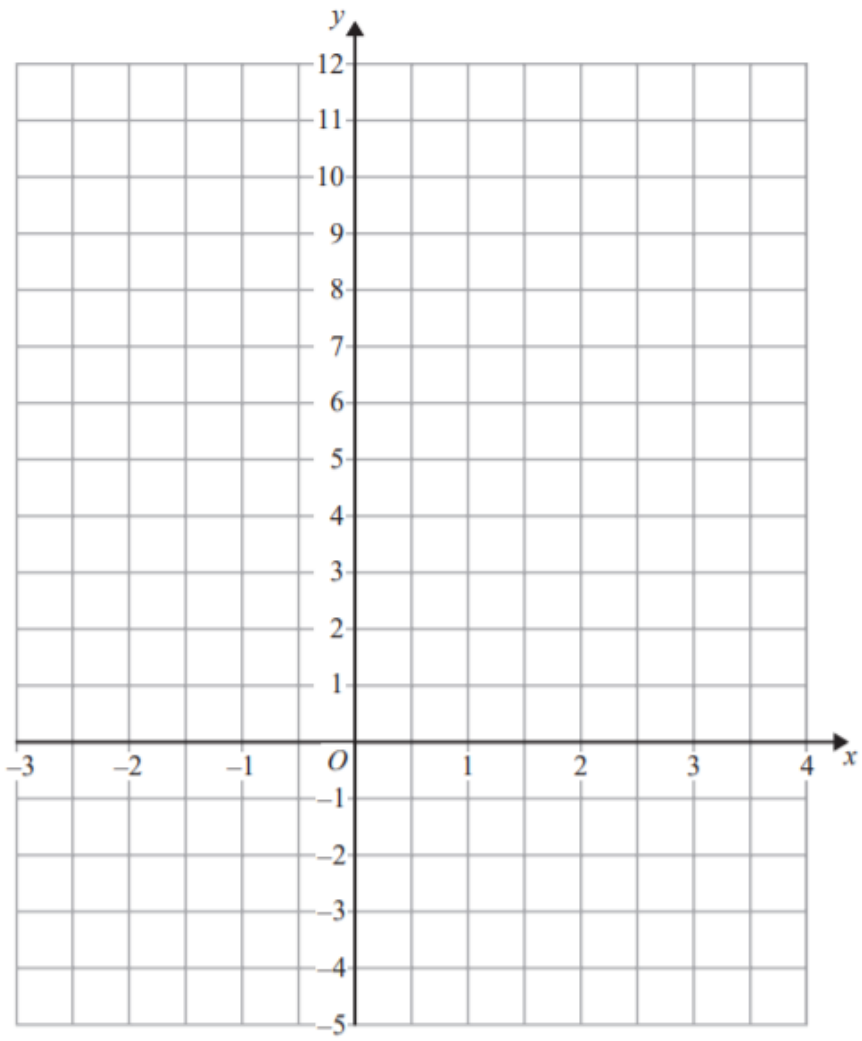
$$x \leqslant 4$$

(3)

(Total for Question 14 is 5 marks)

2.

(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 (×) a point on the grid that satisfies both the inequalities

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

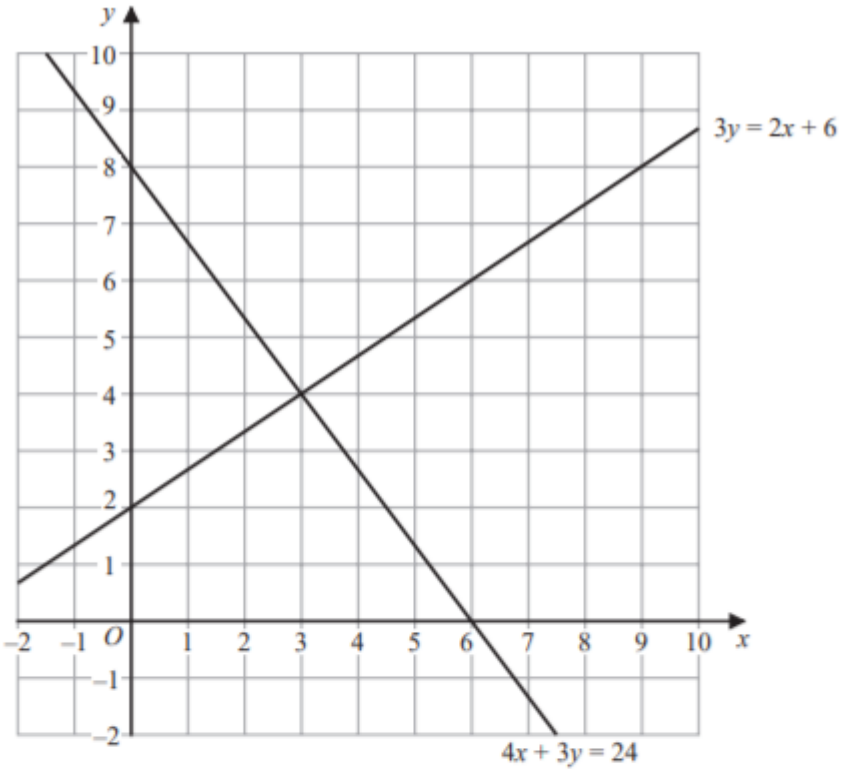
Label this point P.

(2)

(Total for Question 4 is 5 marks)

3.

The diagram shows two straight lines drawn on a grid.



(a) Write down the solution of the simultaneous equations

$$3y = 2x + 6$$
$$4x + 3y = 24$$

$x =$ .....

$y =$ .....

(1)

(b) Show, by shading on the grid, the region defined by all five of the inequalities

$x \geqslant 0$ $y \geqslant 0$ $x + y \geqslant 4$ $3y \leqslant 2x + 6$ $4x + 3y \leqslant 24$

Label the region **R**.

(3)

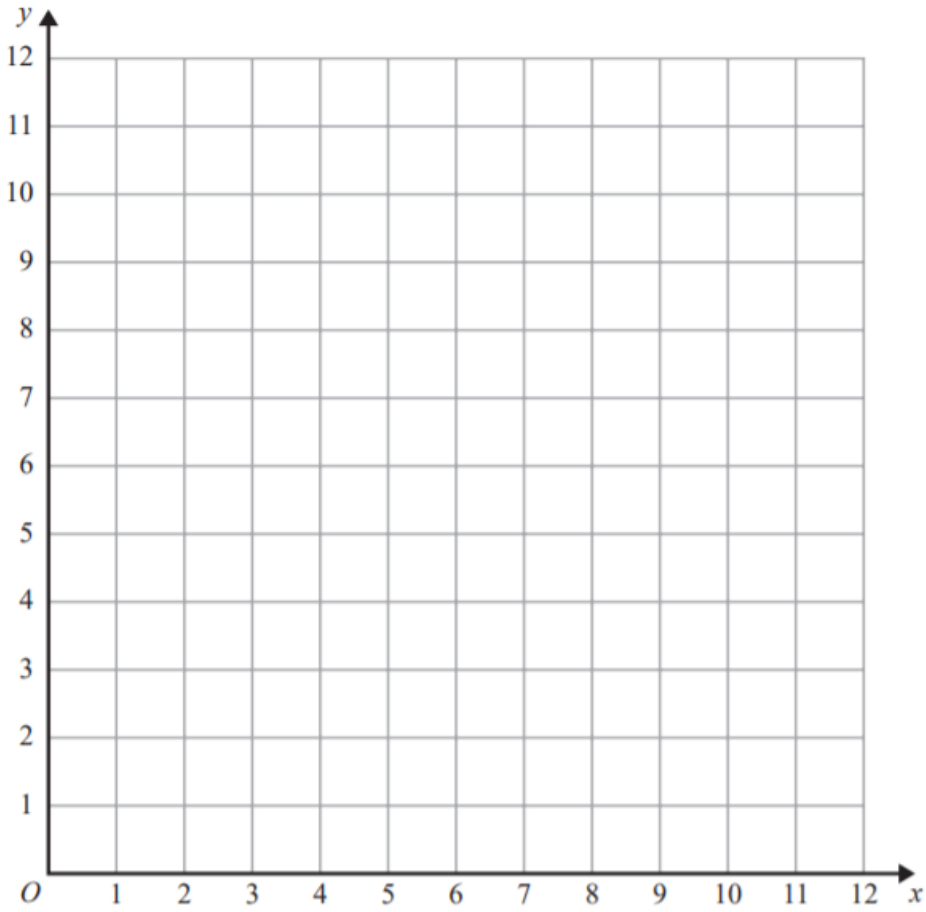
(Total for Question 12 is 4 marks)

4.

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

$$y > 5 \quad \text{and} \quad y < 2x + 1 \quad \text{and} \quad x + y < 10$$

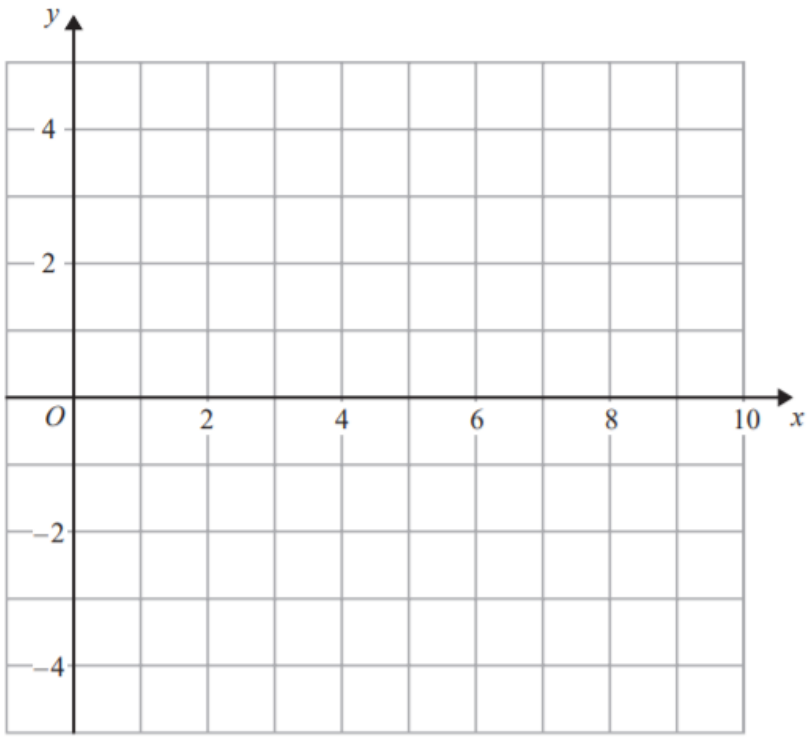
Label your region **R**.



(Total for Question 13 is 3 marks)

5.

(a) On the grid, draw the line with equation $x + 2y = 8$ for values of x from 0 to 9



(2)

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

$x + 2y \leqslant 8$

$x \geqslant 2$

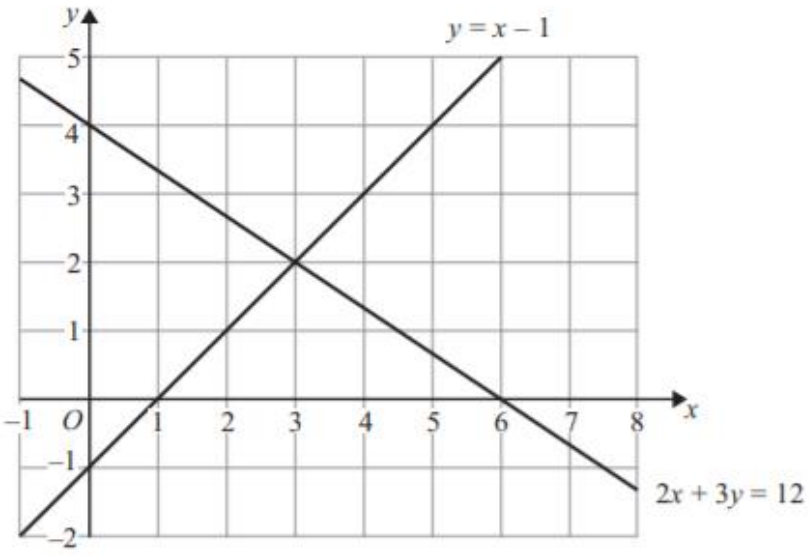
$y \geqslant 1$

Label your region **R**.

(3)

(Total for Question 5 is 5 marks)

6.



The diagram shows two straight lines.
The equations of the lines are $y = x - 1$ and $2x + 3y = 12$

(a) Write down the solution of the simultaneous equations

$$y = x - 1$$
$$2x + 3y = 12$$

$x =$ ..... , $y =$ .....

(1)

(b) Find an equation of the line which is parallel to the line with equation $2x + 3y = 12$ and passes through the point (0, 10)

.....

(4)

(c) On the grid, mark with a cross (×) each point which satisfies both these inequalities $y > x - 1$ and $2x + 3y < 12$ and whose coordinates are **positive integers**.

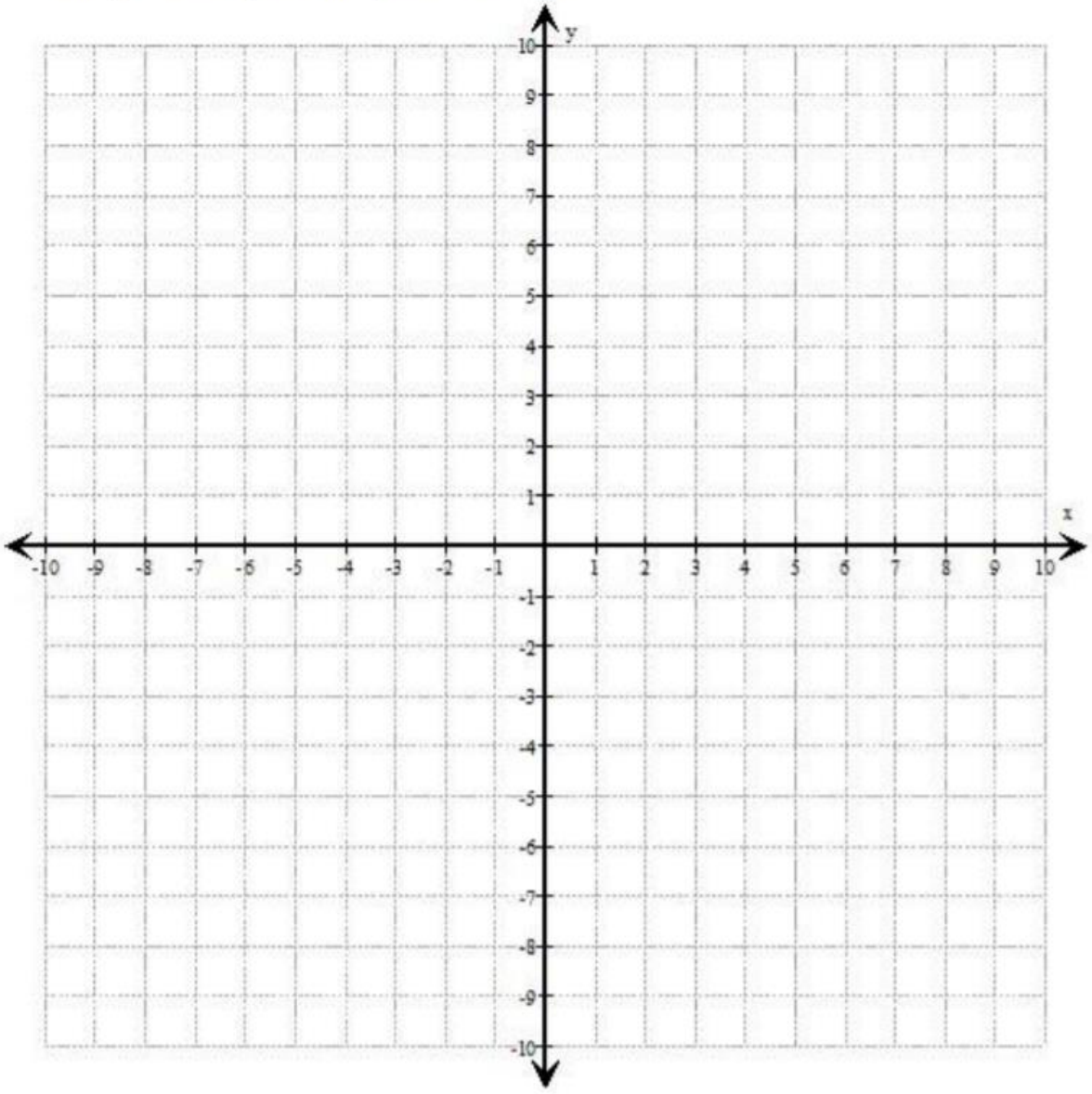
(2)

(Total for Question 15 is 7 marks)

7.

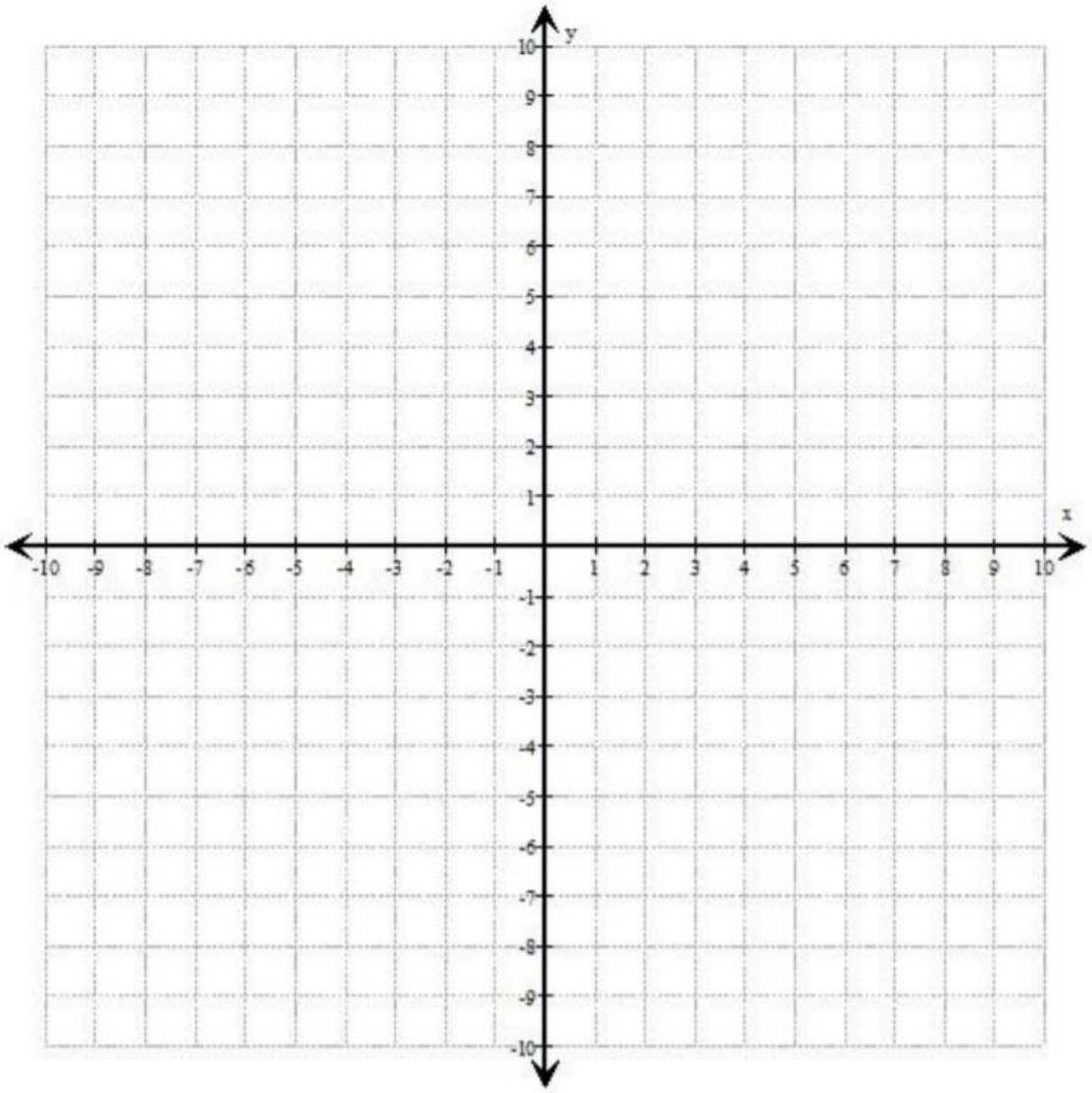
1. On the axes below, shade the region which satisfies all the inequalities

a. $y \leq 5$, $y \geq x$, $y > -x + 1$



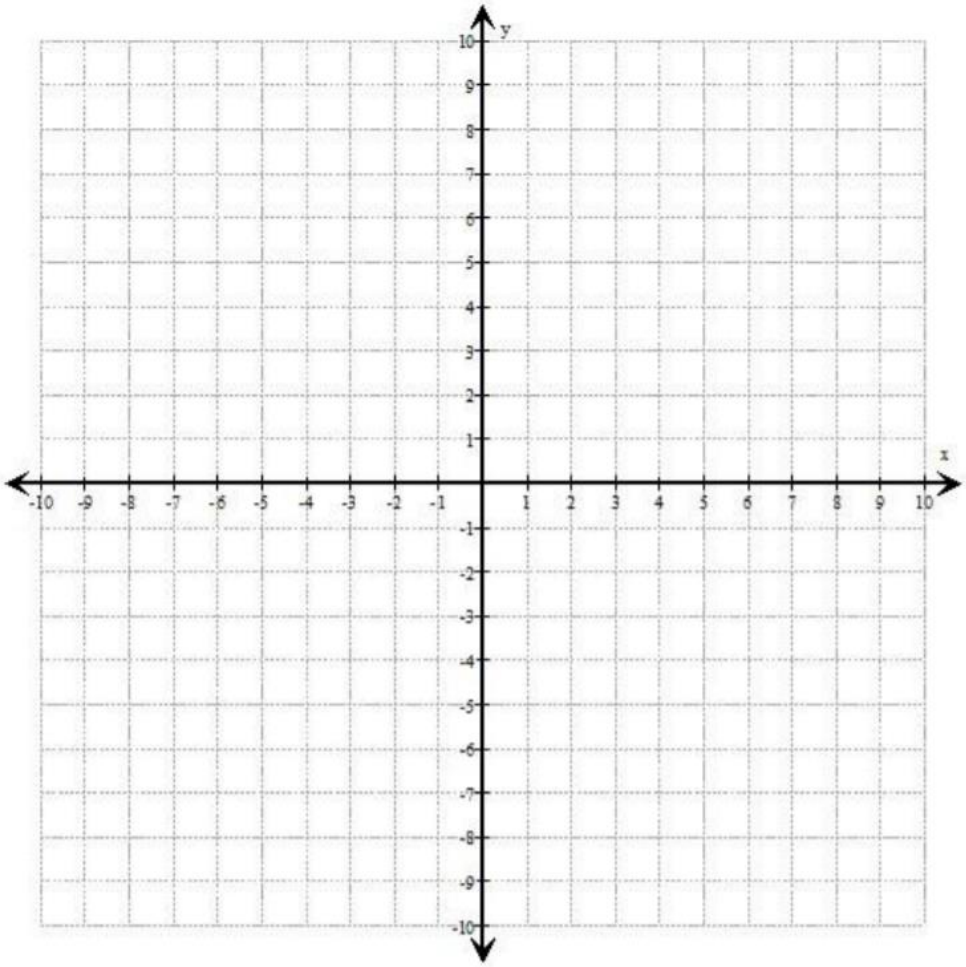
(4 Marks)

b. $y \leq 4, \quad y \geq -2, \quad y > x - 1, \quad y < x + 5$



(4 Marks)

c. $y \leq 5, \qquad y \geq 7 - x, \qquad y \geq x - 4$



(4 marks)