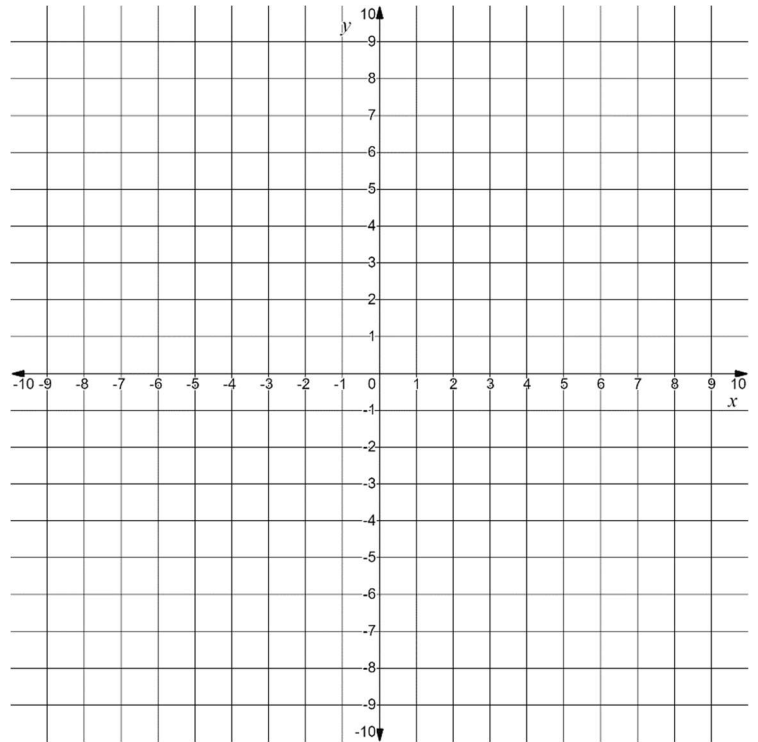Name: _____   Date: _____

1. Find the solution region of the following systems of linear inequalities. Assume $x \in \mathbb{R}$ and $y \in \mathbb{R}$.
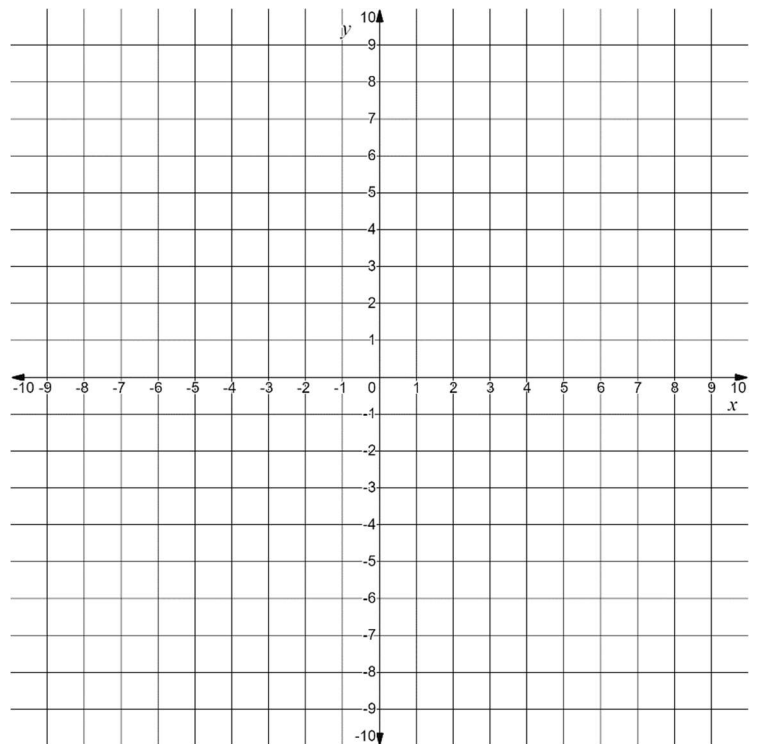
a.

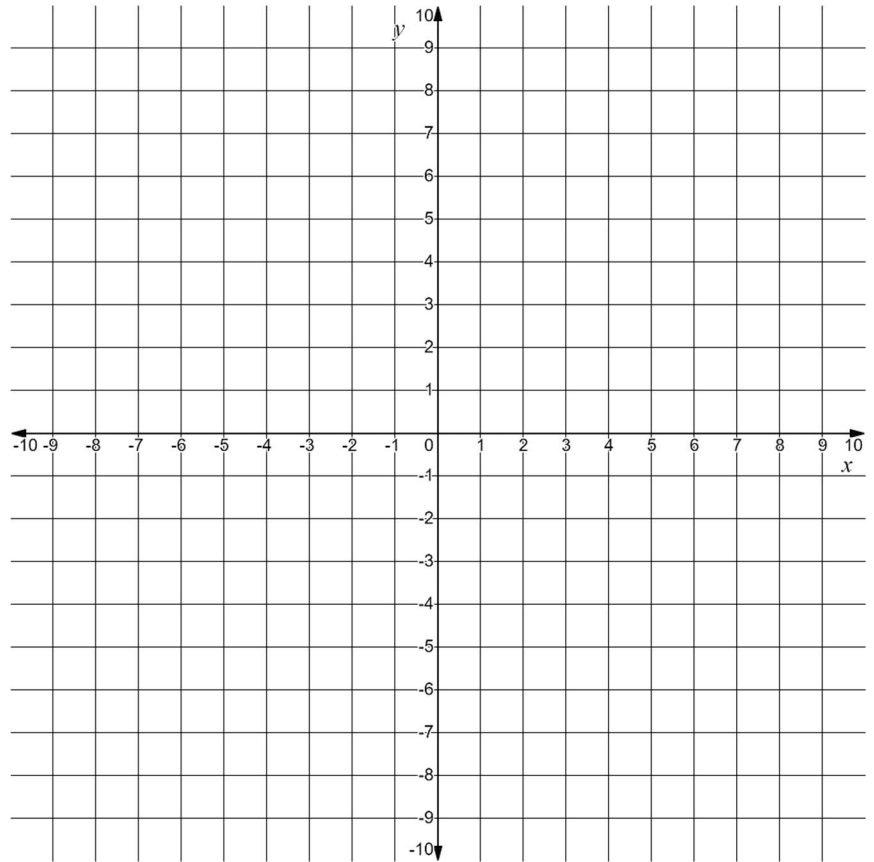$$y > -\frac{3}{4}x + 4$$
$$y > \frac{1}{2}x - 1$$

b.

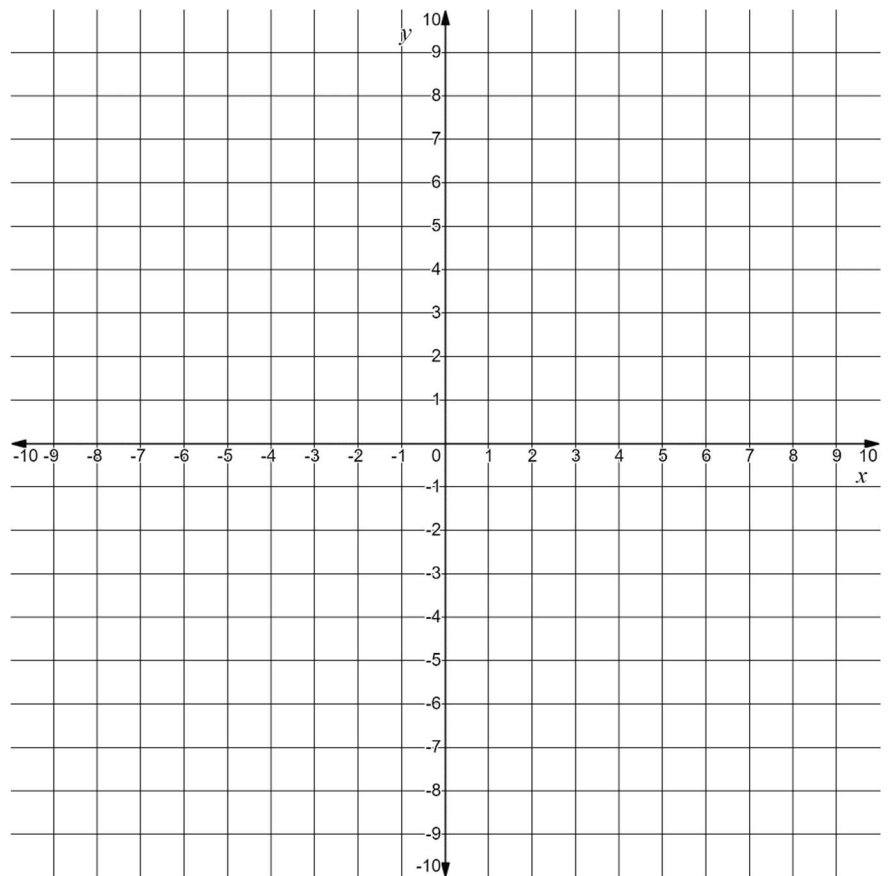$$y \geq -\frac{5}{2}x + 10$$
$$y \leq \frac{1}{2}x + 4$$

c.

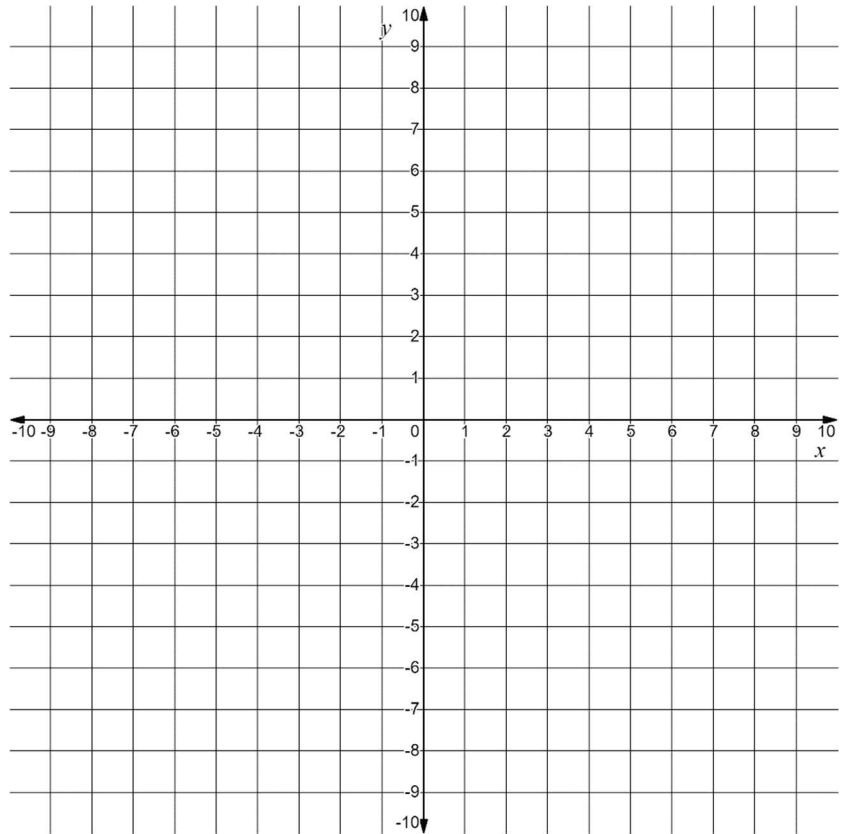$$y < 2x + 2$$
$$y \leq -2$$

d.

$$x - 2y \geq 6$$
$$x \leq 2$$

2. Find the solution region of the following systems of linear inequalities. Assume $x \in \mathbb{Z}$ and $y \in \mathbb{Z}$
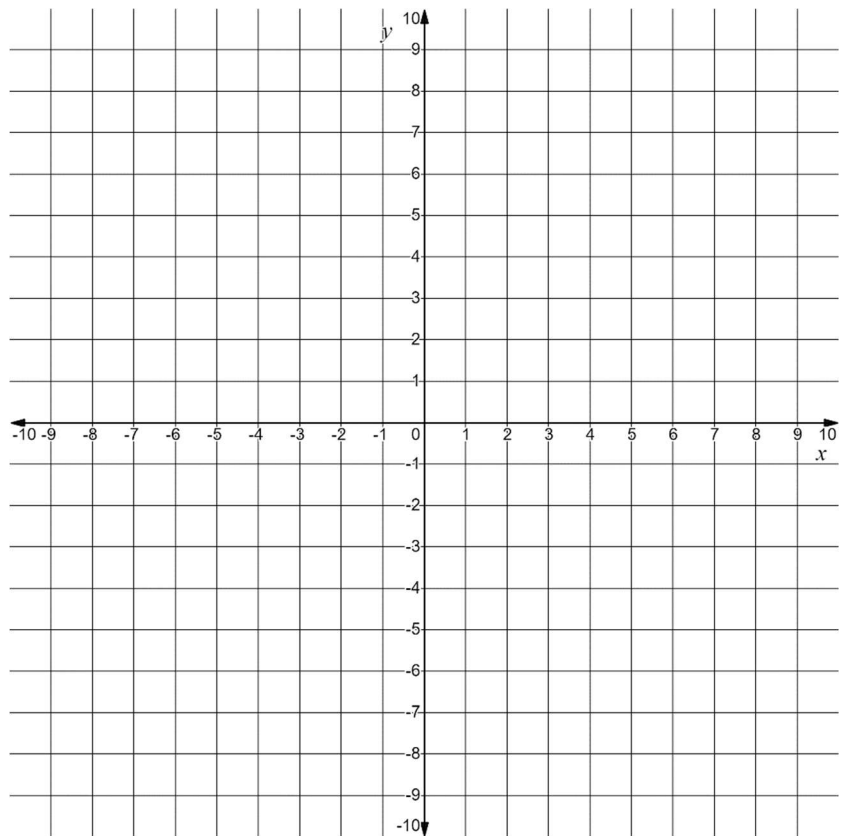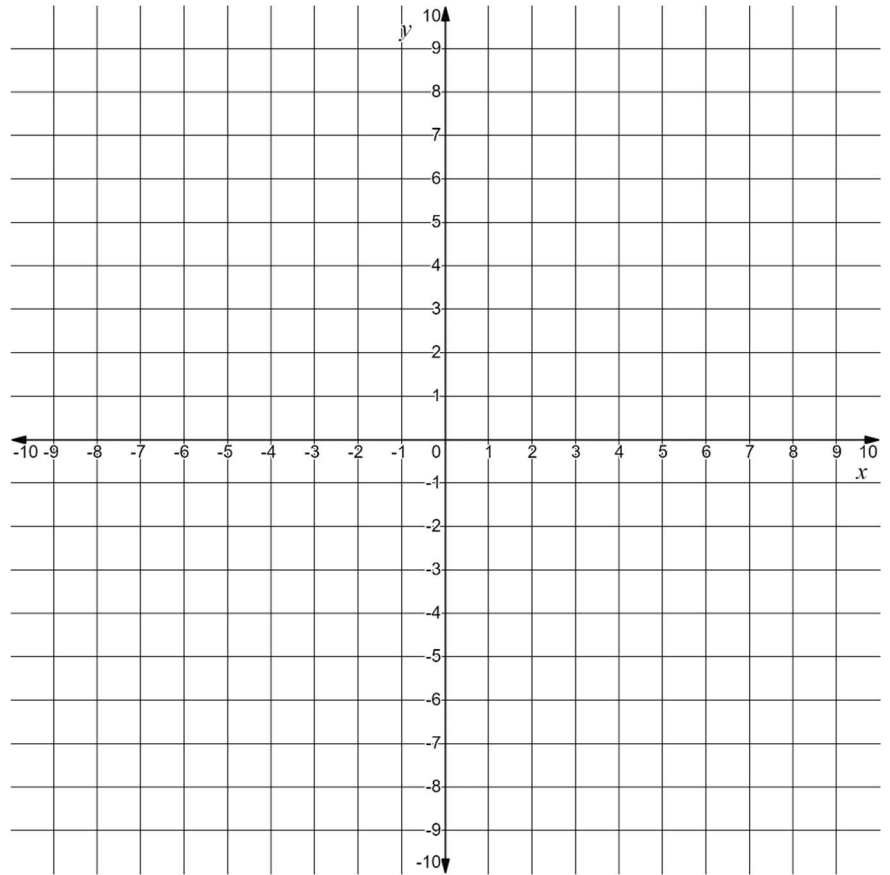
a.

$$y > \frac{3}{2}x + 3$$
$$y > -3$$

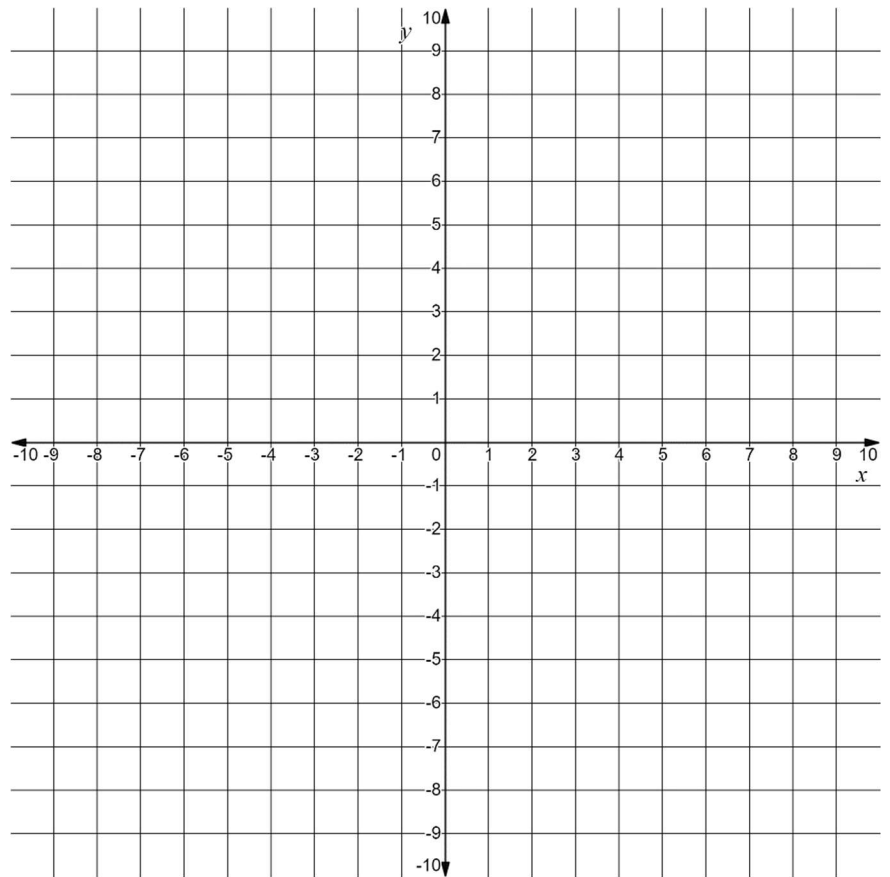b.

$$2x + 3y \geq -9$$
$$x \leq -3$$

c.

$$5x - 4y > 20$$
$$x + 4y < 8$$

d.

$$\frac{1}{2}x + \frac{1}{3}y \geq -1$$
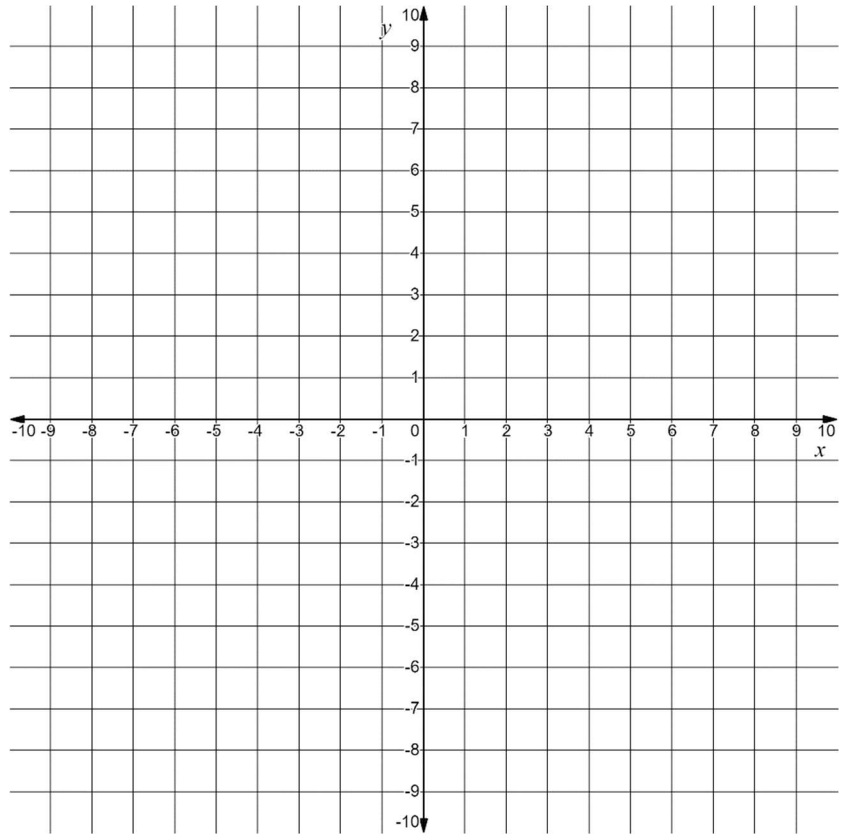$$y \geq \frac{1}{4}x - 3$$

3. Find the solution region of the following systems of linear inequalities. Assume $x \in \mathbb{W}$ and $y \in \mathbb{W}$
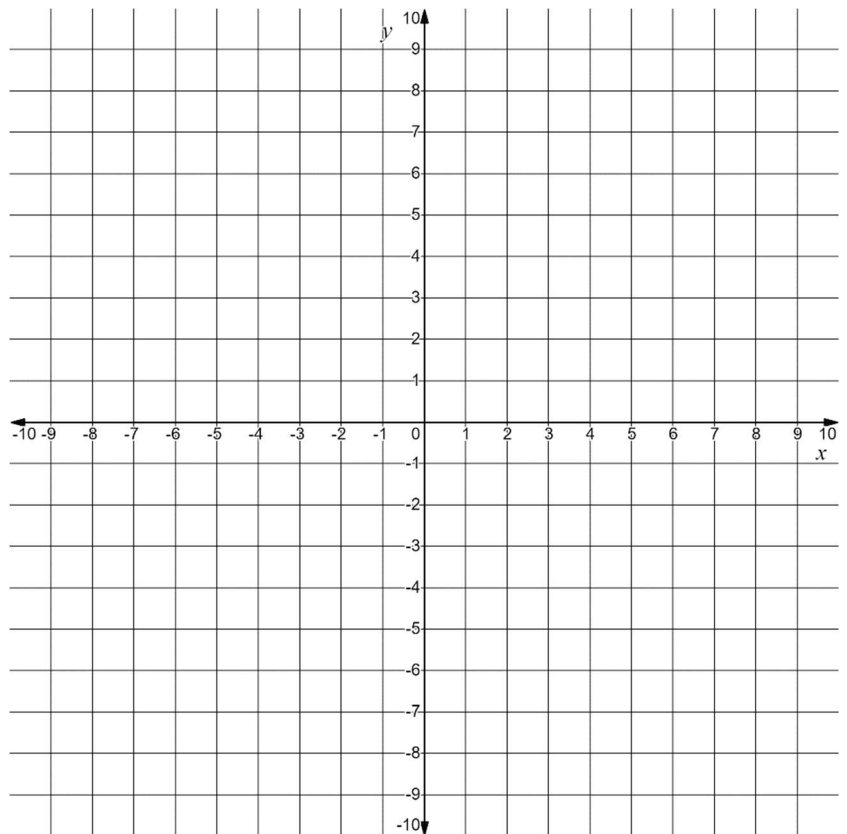
a.

$$y > 4x - 10$$
$$y > \frac{1}{3}x + 1$$
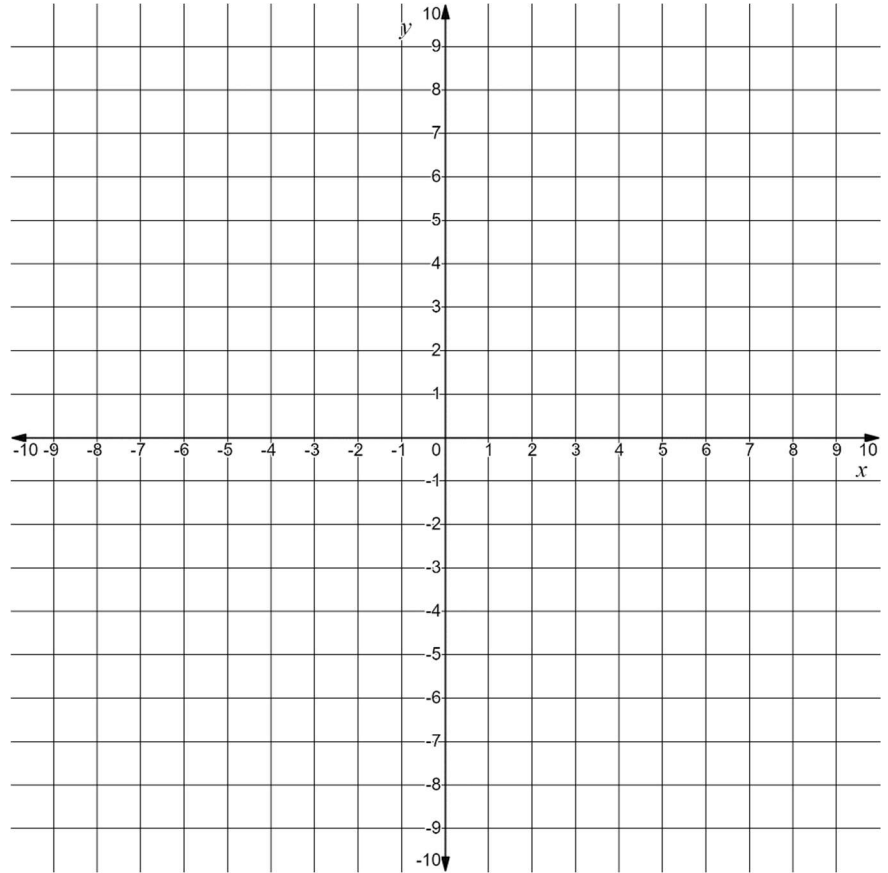

b.

$$x - 2y \geq -6$$
$$3x + 2y \geq 2$$
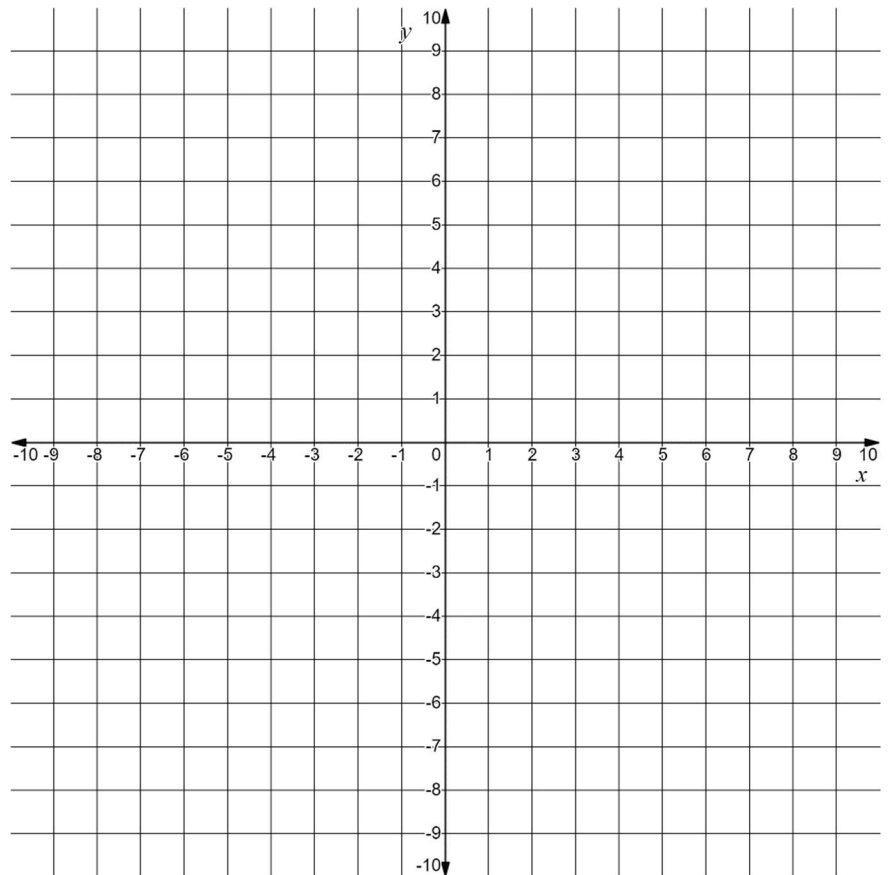
c.

$$y - 3 > -2(x - 5)$$
$$y + 1 > \frac{1}{2}(x + 1)$$

d.

$$y \geq \frac{1}{3}x - 1$$
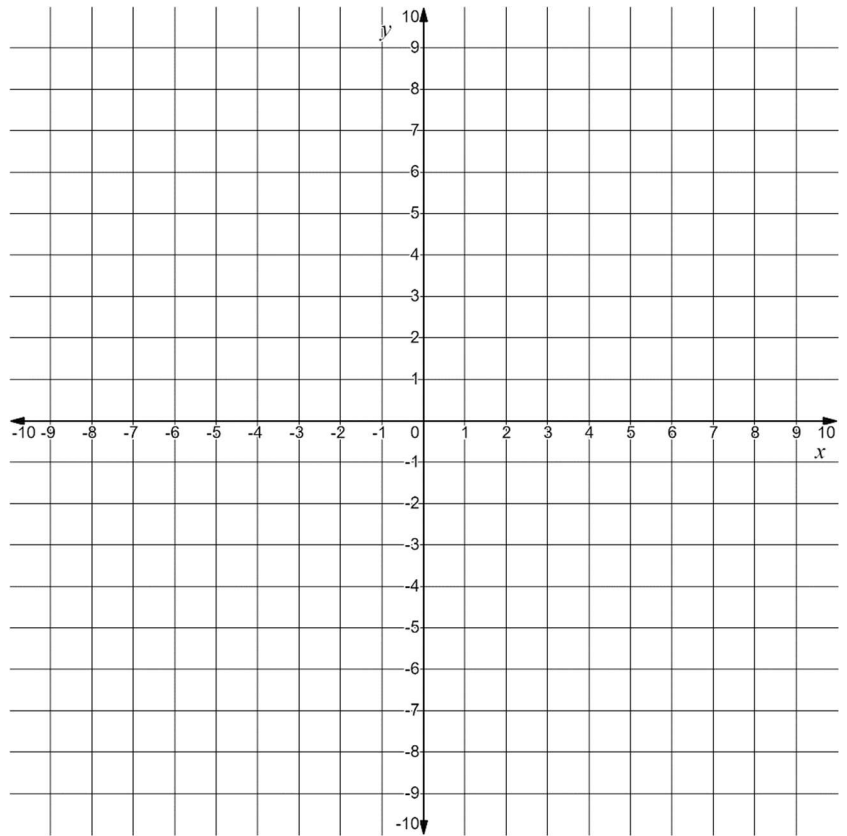$$y \leq \frac{4}{3}x + 2$$

4. Find the solution region of the following systems of linear inequalities. Assume $x \in \mathbb{N}$ and $y \in \mathbb{N}$

e.

$$2x + y < -3$$
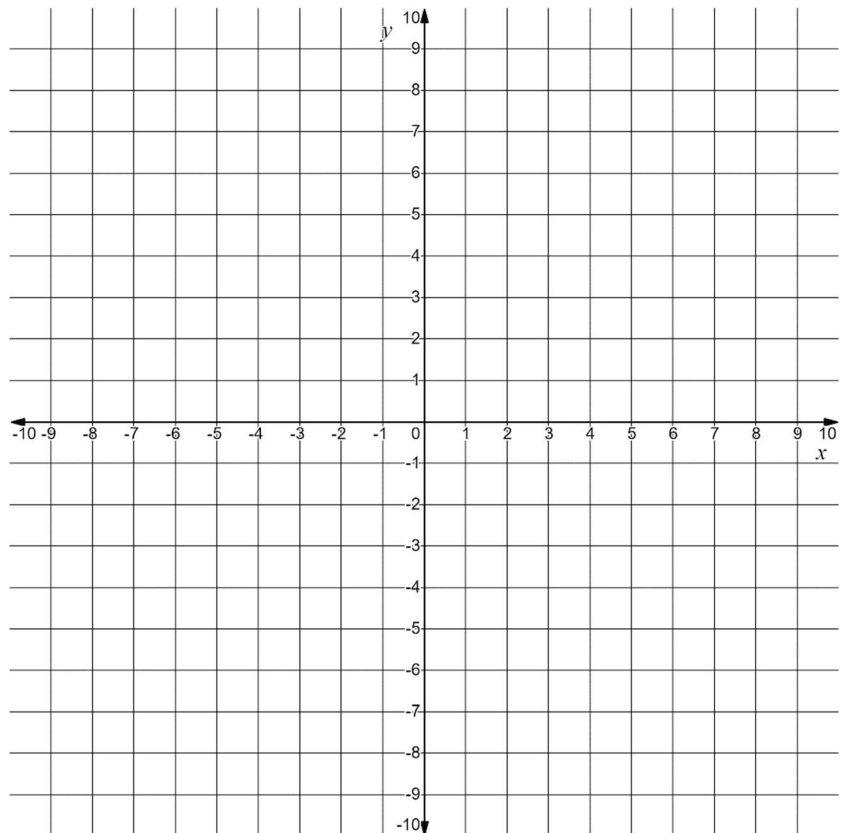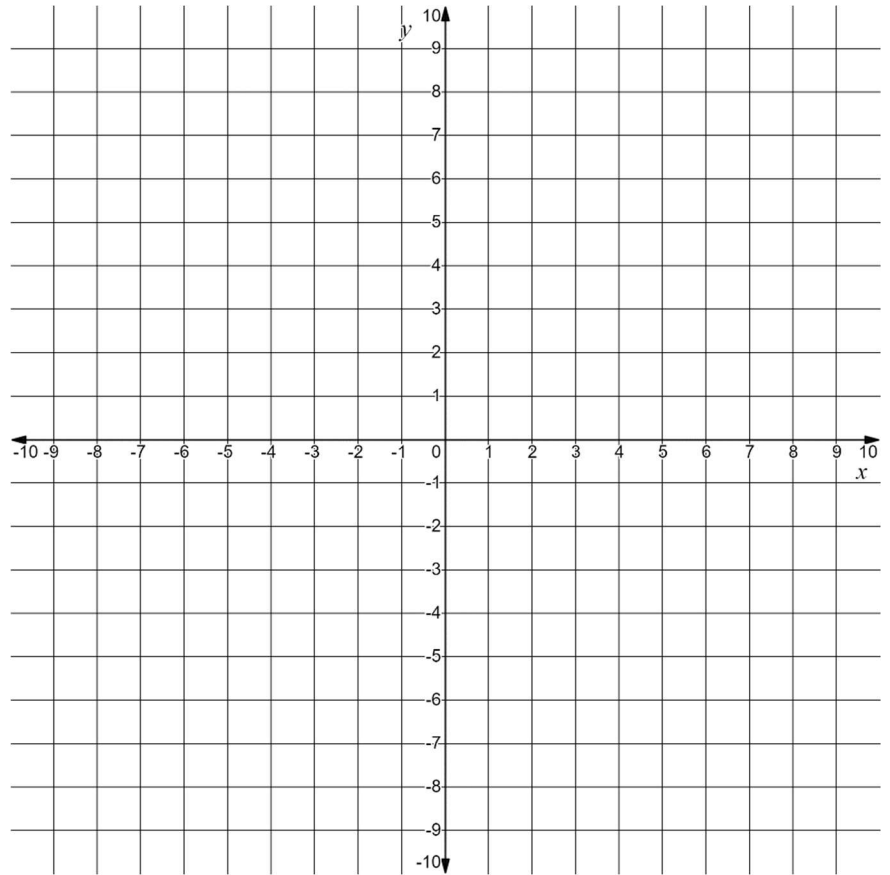$$2x - y \leq -1$$

f.

$$y > 2x + 2$$
$$y \geq -2$$

g.

$$3x + y > -3$$
$$x + 2y > 4$$

h.

$$y < \frac{5}{3}x + 2$$
$$y < 4x - 4$$