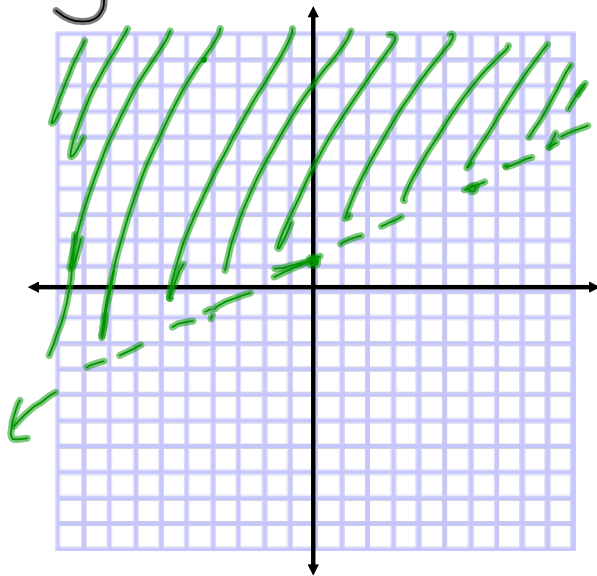


# linear inequalities

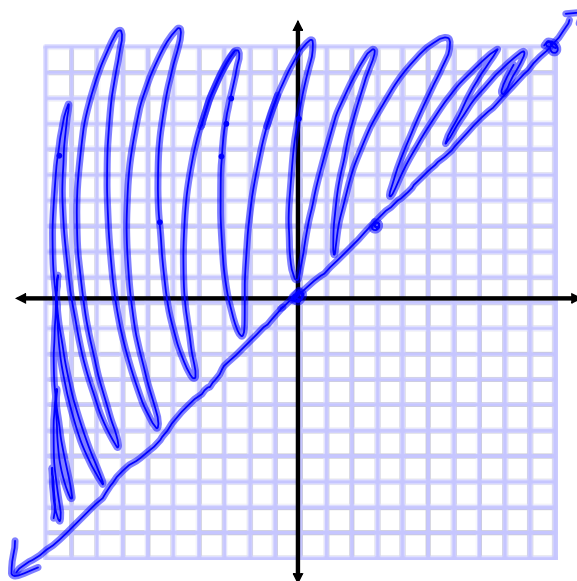
$$y > \frac{1}{2}x + 1$$

$$y = \frac{1}{2}x + 1$$



dashed  
because  
just  $>$  not  
 $\geq$

$$y \geq x$$
$$y = x$$

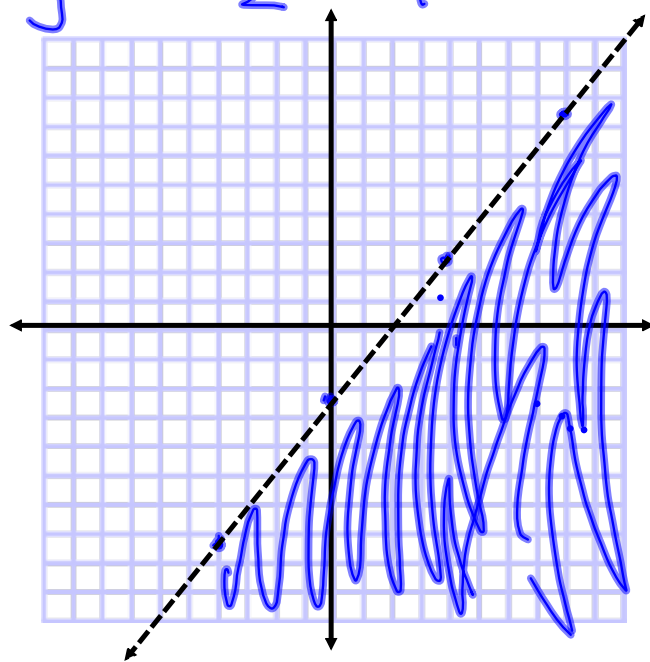


$$5x - 4y > 10$$

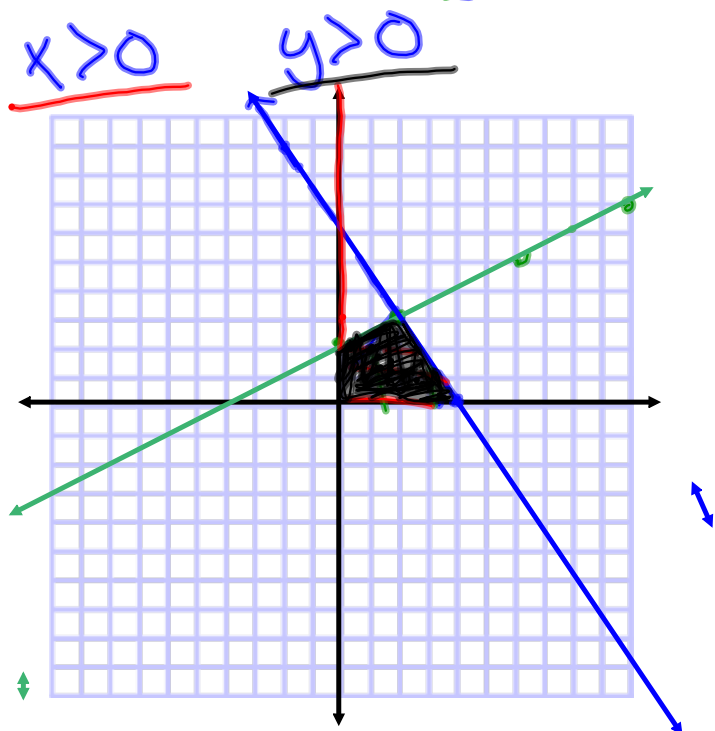
$$-5x$$

$$\frac{-4y}{-4} > \frac{10 - 5x}{-4}$$

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



$$\begin{array}{l}
 x > 0 \\
 y > 0 \\
 3x + 2y \leq 12 \\
 \quad \quad \quad -3x \\
 \hline
 2y \leq 12 - 3x \\
 \quad \quad \quad 2 \\
 \hline
 y \leq 6 - \frac{3}{2}x
 \end{array}
 \qquad
 \begin{array}{l}
 x - 2y \geq -4 \\
 \quad \quad \quad -x \\
 \hline
 -2y \geq -4 - x \\
 \quad \quad \quad -2 \\
 \hline
 y \leq 2 + \frac{1}{2}x
 \end{array}$$

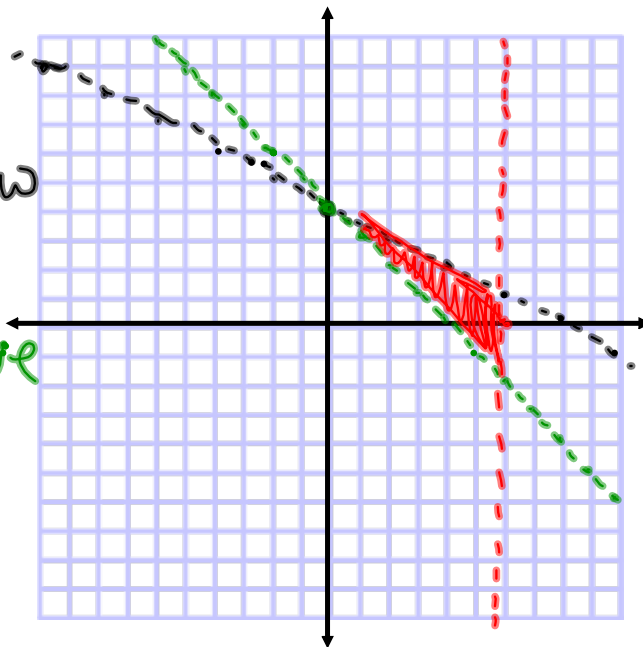


$$\begin{matrix} x < 6 \\ x + y > 4 \\ -x \end{matrix}$$

$$y < -\frac{1}{2}x + 4 \text{ below}$$

$$\underline{y > 4 - x} \text{ above}$$

$$\underline{x < 6} \text{ left}$$



your turn

$$x \geq 0 \quad y \leq 0 \quad x + y > -1$$