

Warm-up 11/12

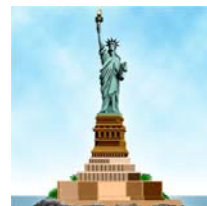
Solve the following systems of equations

1. $x = 2$
 $y = 6x - 11$

2. $2x - 3y = -1$
 $y = 2x - 2$

3. $y = 3x - 8$
 $y = -2x + 4$

4. $-28x - 14y = 98$
 $-20x + 14y = -50$



Warm-up 11/13



Solve the following systems of equations

1. $x = 2$
 $y = 6x - 11$ (2, 1)

$$y = 6x - 11$$

$$y = 6(2) - 11$$

$$y = 12 - 11$$

$$y = 1$$

2. $2x - 3y = -1$
 $y = 2x - 2$

$$2x - 3(2x - 2) = -1$$

$$2x - 6x + 6 = -1$$

$$-4x + 6 = -1$$

$$\frac{-4x}{-4} = \frac{-7}{-4} = 1.75x$$

$$2(1.75) - 3y = -1$$

$$3.5 - 3y = -1$$

$$3.5 + 3.5 - 3y = -1 + 3.5$$

$$7 - 3y = 2.5$$

$$-3y = -4.5$$

$$\frac{-3y}{-3} = \frac{-4.5}{-3}$$

$$y = 1.5$$

3. $y = 3x - 8$
 $y = -2x + 4$

(2.4, -.8)

$$-28(-1) - 14y = 98$$

$$28 - 14y = 98$$

$$\frac{-14y}{-14} = \frac{70}{-14}$$

$$y = -5$$

4. $-28x - 14y = 98$
 $-20x + 14y = -50$

$$\frac{-48x}{-48} = \frac{48}{-48}$$

$$X = -1$$

$$y = \underline{m}x + \underline{b}$$

shading

above $>$ line dotted/dashed

below $<$ dotted/dashed

above \geq solid

below \leq solid

~~open side shaded~~

$$y \geq 2x - 3$$

$$y \leq -2x + 4$$

$$y = 2x - 3$$

Today's Goal

I can...

- solve a system of Inequalities by graphing

$>$ greater than (dashed line, shade above)

$<$ less than (dashed line, shade below)

\geq greater than or equal to (solid line, shade above)

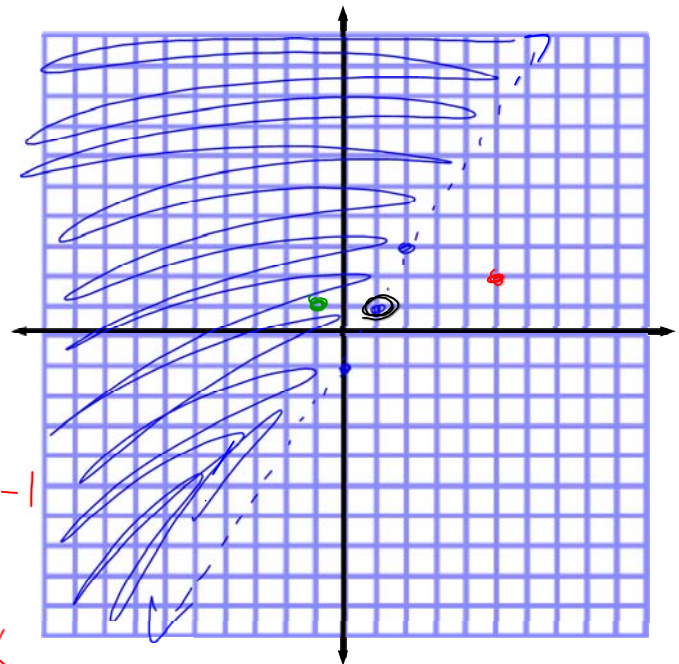
\leq less than or equal to (solid line, shade below)

$y > 2x - 1$
 $(-1, 1)$ $(1, 1)$ $(5, 2)$

1. Graph points as normal
2. Draw a solid or dashed line according to the sign.
3. Shade above or below the line according to the sign.

$1 > 2(-1) - 1$ $2 > 2(5) - 1$
 $1 > -2 - 1$ $2 > 10 - 1$
 $1 > -3 \checkmark$ $2 > 9 \times$

$1 > 2(1) - 1$
 $1 > 2 - 1$
 $1 > 1 \times$



$$y \geq -2x - 1$$

$$(1, 2)$$

$$2 \geq -2(1) - 1$$

$$2 \geq -2 - 1$$

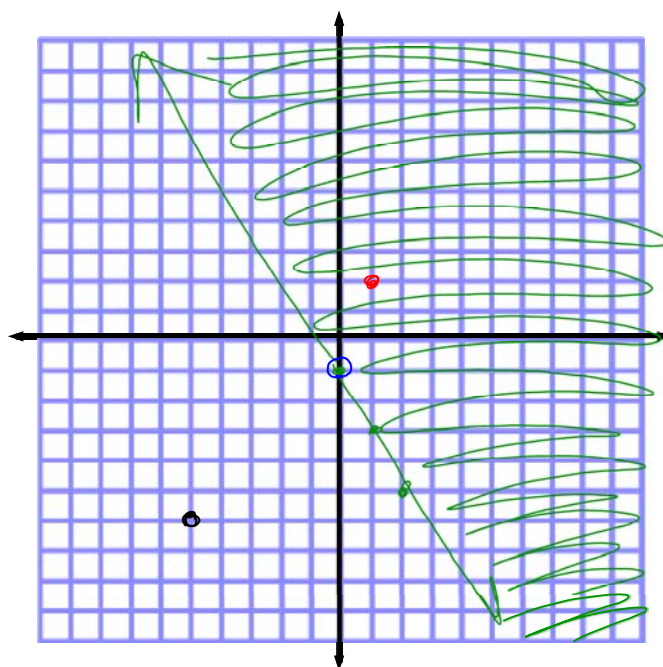
$$2 \geq -3 \checkmark$$

$$(-5, -6)$$

$$-6 \geq -2(-5) - 1$$

$$-6 \geq 10 - 1$$

$$-6 \geq 9 \times$$



$$(0, -1)$$

$$-1 \geq -2(0) - 1$$

$$-1 \geq -1 \checkmark$$

$$y \geq -2x - 1$$

$$1 \geq -2(-1) - 1$$

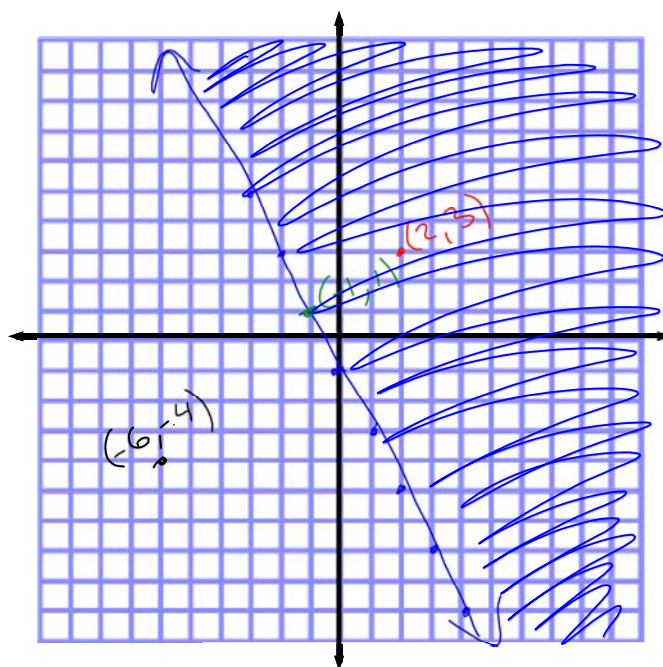
$$1 \geq 2 - 1$$

$$1 \geq 1 \checkmark$$

$$-4 \geq -2(-6) - 1$$

$$-4 \geq 12 - 1$$

$$-4 \geq 11 \quad \times$$



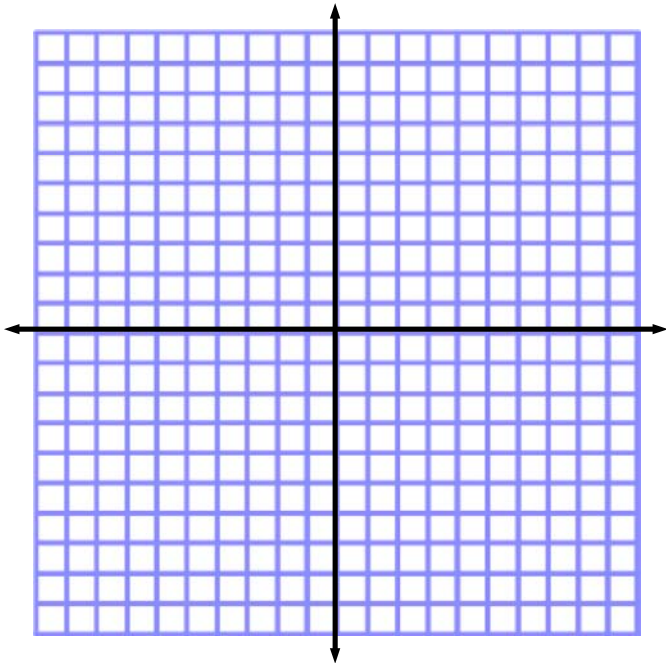
$$3 \geq -2(2) - 1$$

$$3 \geq -4 - 1$$

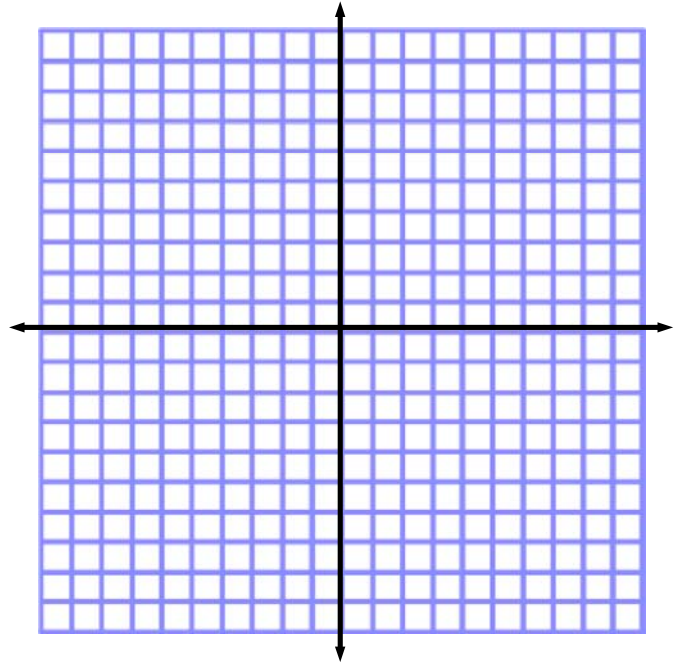
$$3 \geq -5 \checkmark$$

1. Graph the following inequalities.

a.) $y > 2x - 2$

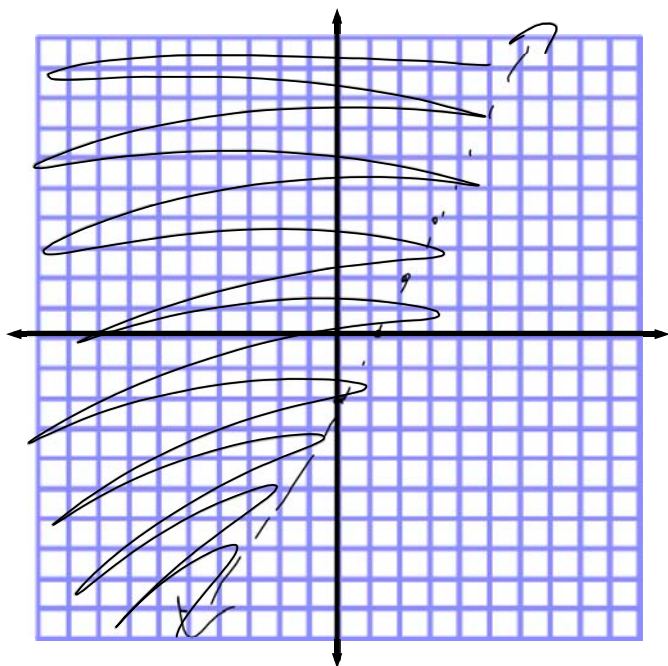


b.) $y \leq -x + 5$

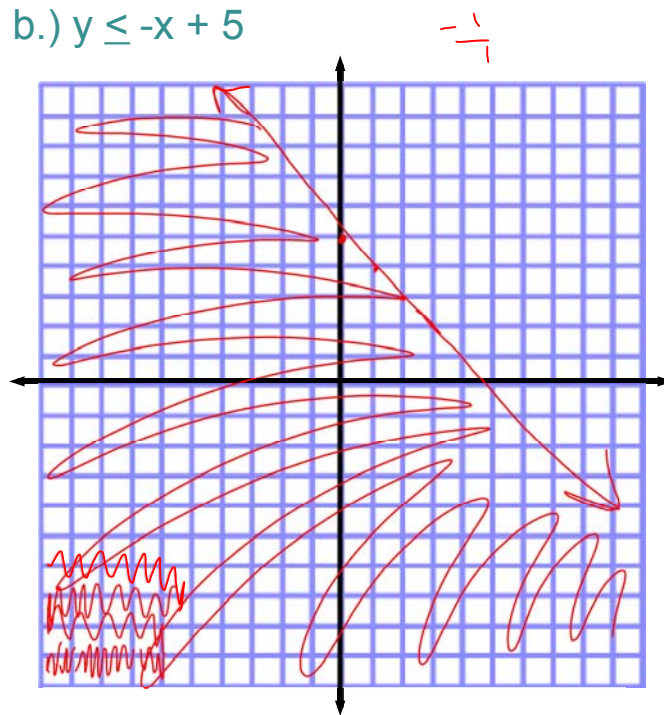


1. Graph the following inequalities.

a.) $y > 2x - 2$



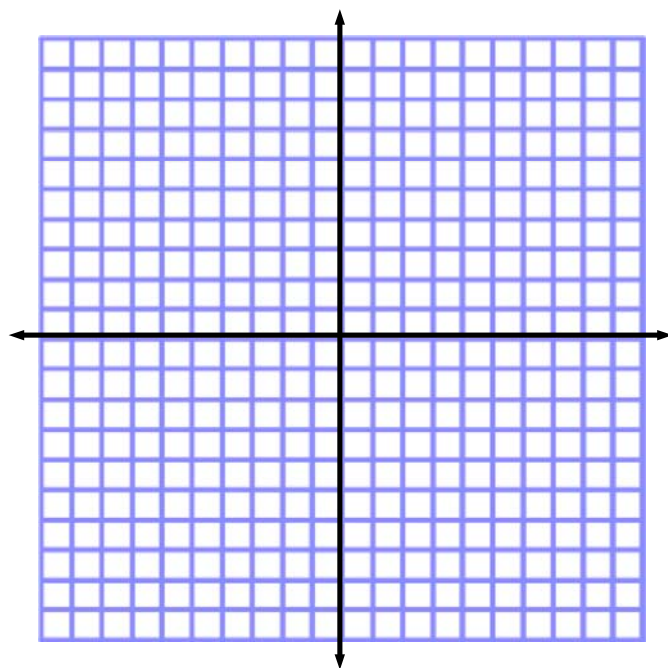
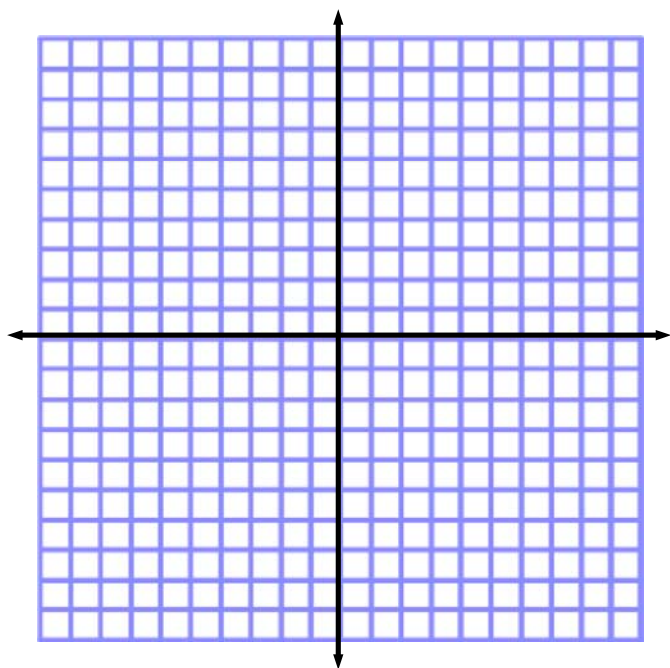
b.) $y \leq -x + 5$



Try This One! (pg 90 in your workbook)

#7 $y \geq 2x$

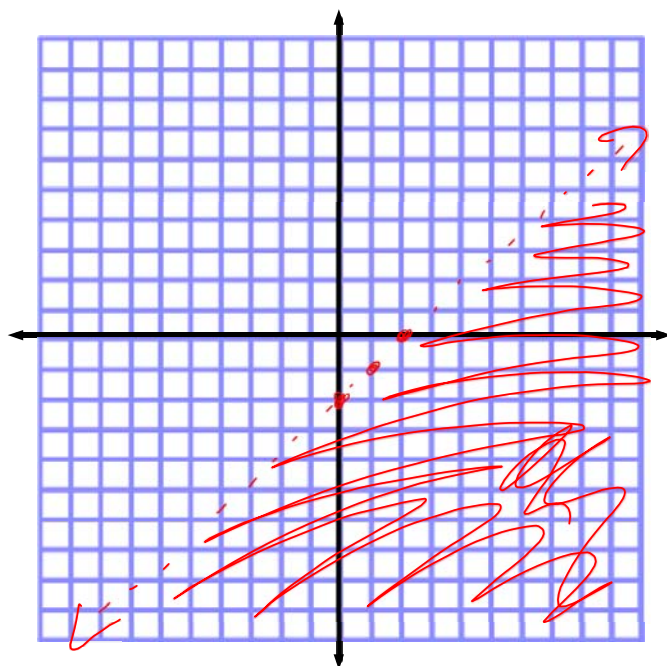
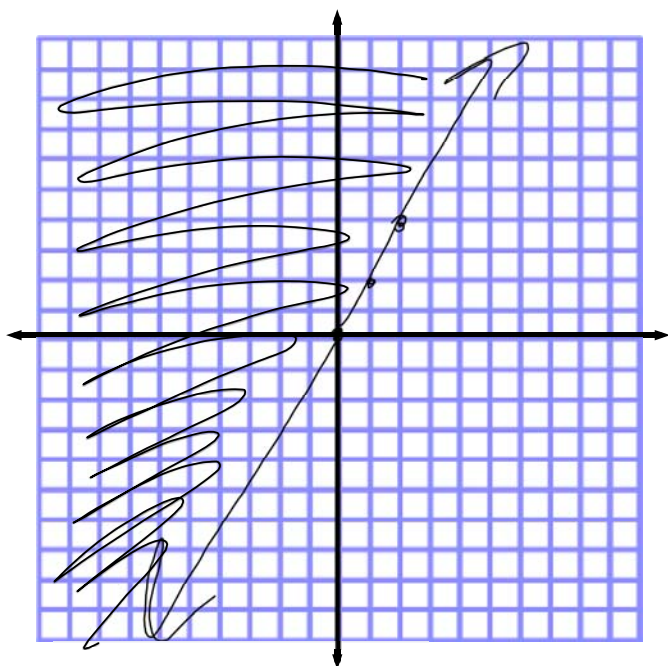
#8 $y < x - 2$



Try This One! (pg 90 in your workbook)

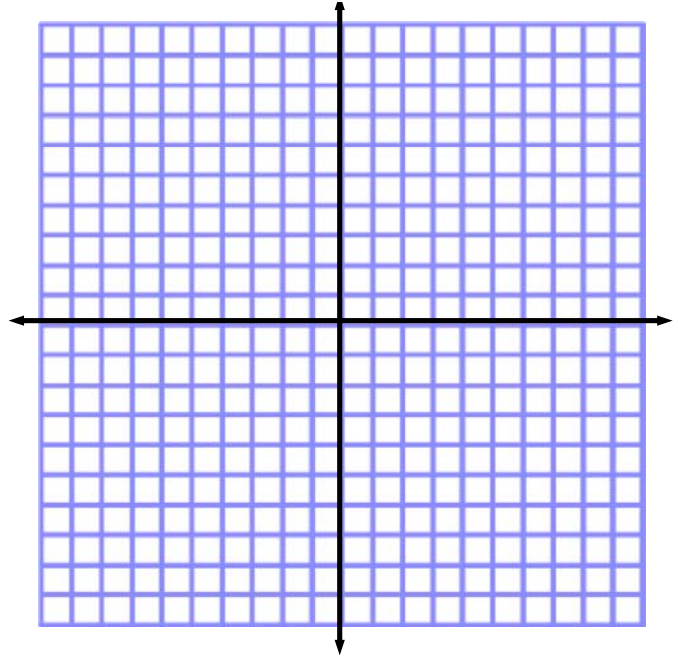
$$y \geq 2x$$

$$y < x - 2$$

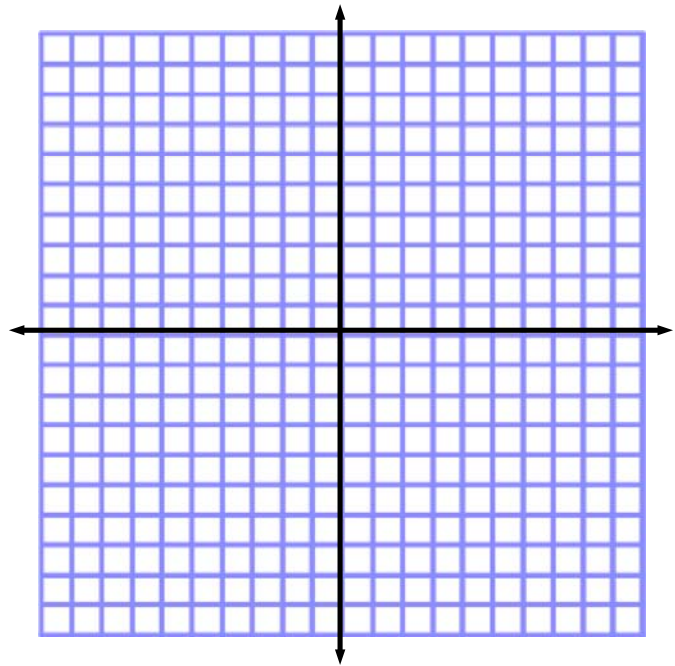


Try This One!

$$y \geq -3x + 4$$

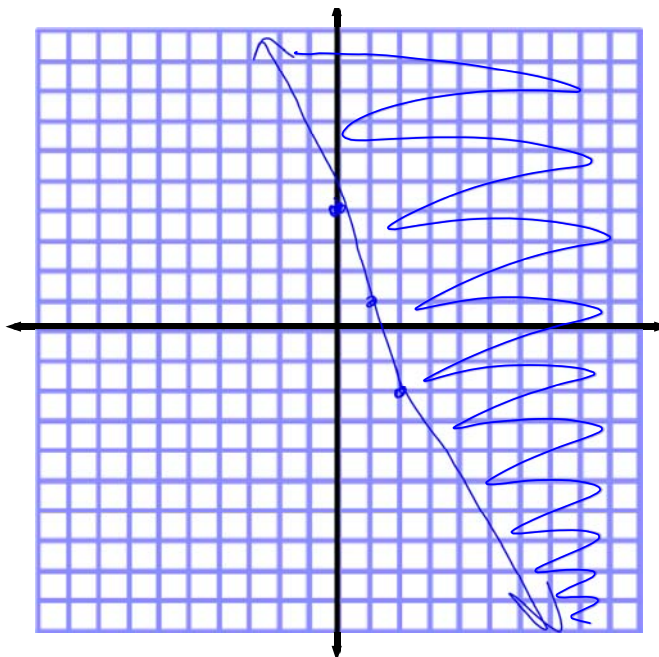
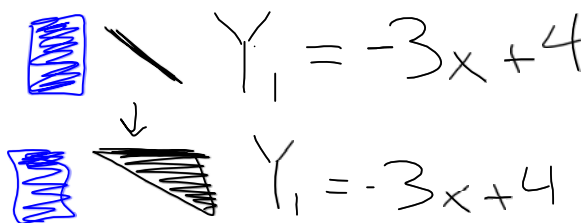


$$y < 4x + 3$$

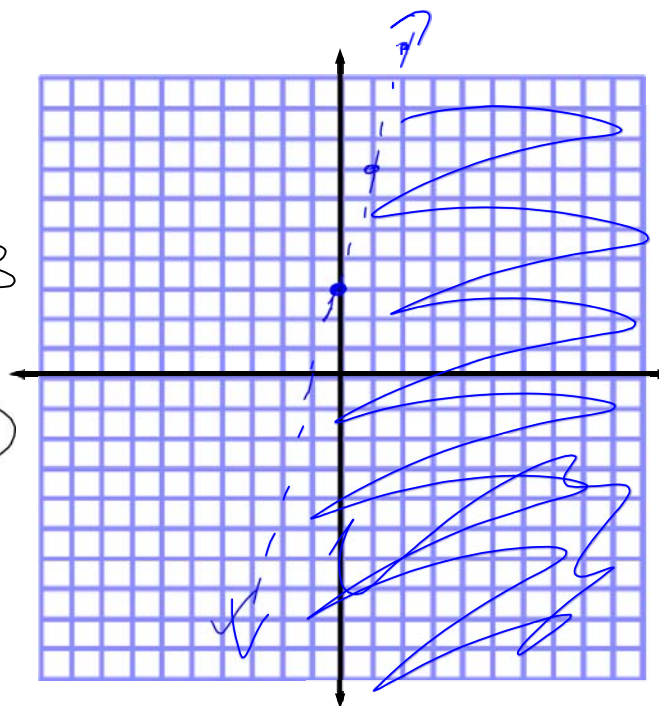
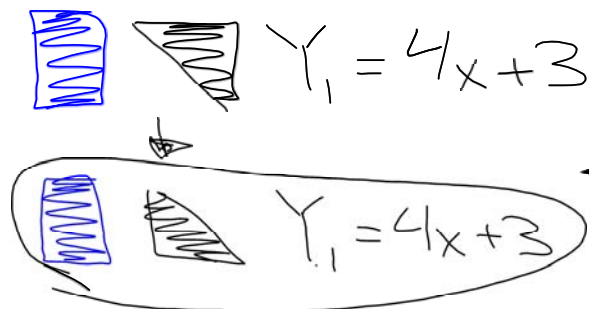


Try This One!

$$y \geq -3x + 4$$



$$y < 4x + 3$$



For each inequality below, describe the boundary line, solid or dashed, and state whether it should be shaded above or below.

1. $y < 2x + 1$ *solid or dashed; above or below*

2. $y \geq -\frac{3}{5}x - 2$ *solid or dashed; above or below*

3. $y \leq 6x - 3$ *solid or dashed; above or below*

4. $y > -3$ *solid or dashed; above or below*

For each inequality below, describe the boundary line, solid or dashed, and state whether it should be shaded above or below.

1. $y < 2x + 1$ *solid or dashed; above or below*

2. $y \geq -3/5x - 2$ *solid or dashed; above or below*

3. $y \leq 6x - 3$ *solid or dashed; above or below*

4. $y > -3$ *solid or dashed; above or below*

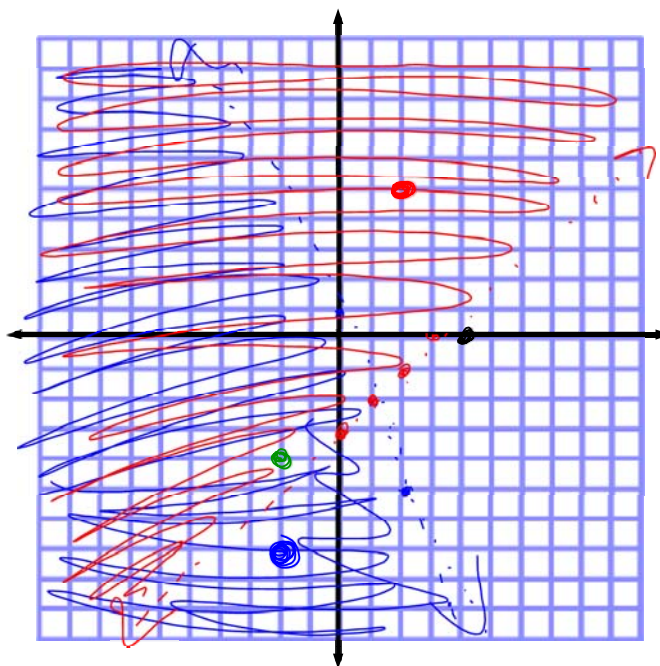
6.7: Solving Systems of Linear Inequalities

Systems of Linear Inequalities:

-2 or more linear inequalities graphed on the same coordinate plane where the common shaded region is the solution.

Example:

$$\begin{cases} y < -3x + 1 \\ y > x - 4 \end{cases}$$







6.7: Solving Systems of Linear Inequalities

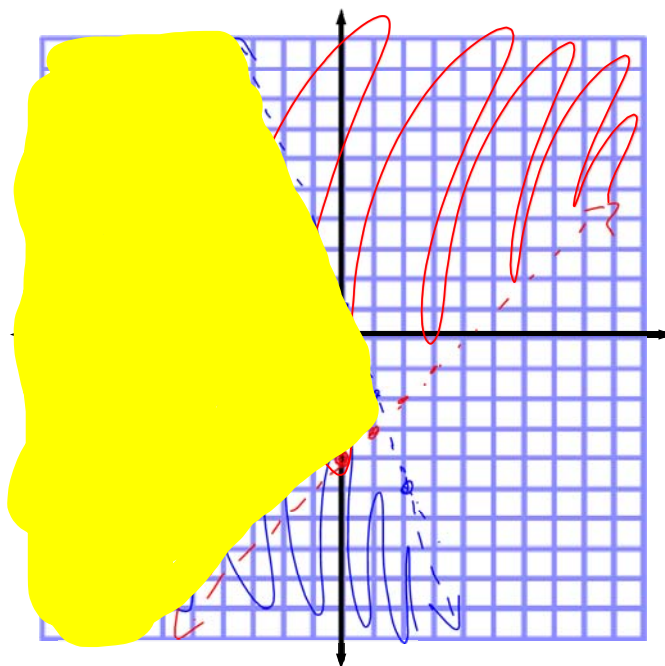
Systems of Linear Inequalities:

-2 or more linear inequalities graphed on the same coordinate plane where the common shaded region is the solution.

Example:

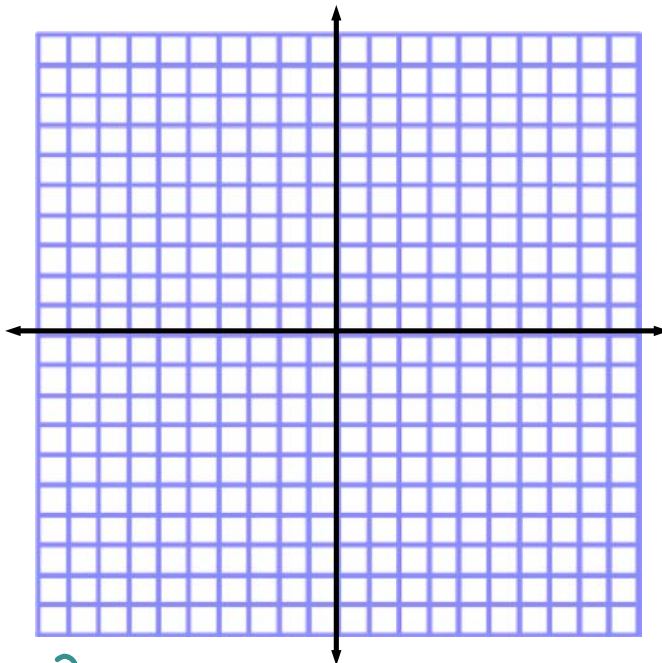
$$\begin{cases} y < -3x + 1 & m = -\frac{3}{1} \\ y > x - 4 & m = \frac{1}{1} \end{cases}$$

  $y_1 = -3x + 1$
  $y_2 = x - 4$



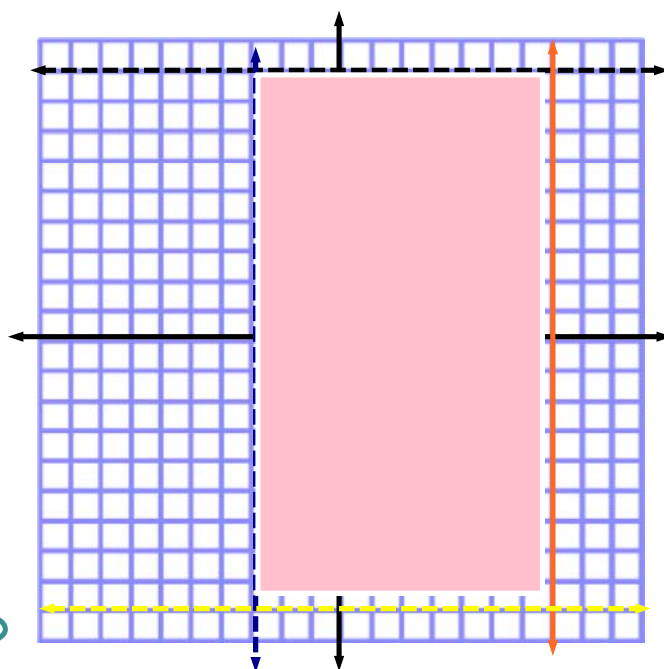
Practice

$$1. \begin{cases} y \leq \frac{3}{2}x - 10 \\ y > -\frac{1}{3}x + 5 \end{cases}$$



Is $(-6, -2)$ a solution?

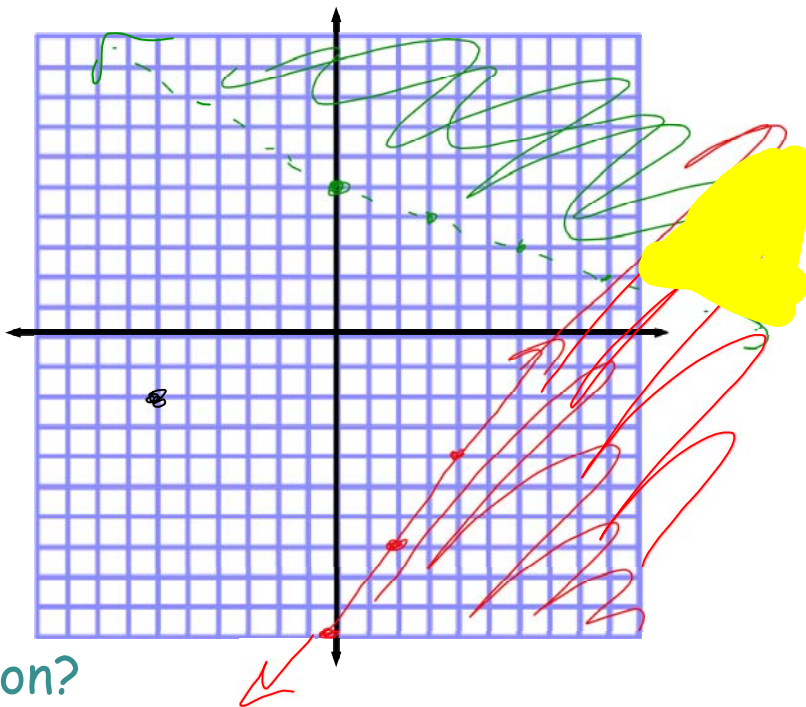
$$2. \begin{cases} y > -9 \\ x \leq 7 \\ x > -3 \\ y < 9 \end{cases}$$



Is $(0,0)$ a solution?

Practice

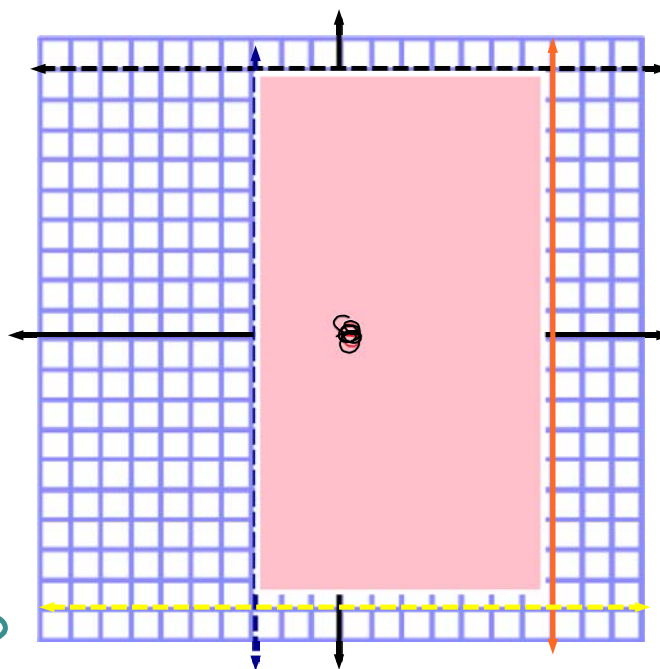
$$1. \begin{cases} y \leq \frac{3}{2}x - 10 \\ y > -\frac{1}{3}x + 5 \end{cases}$$



Is $(-6, -2)$ a solution?

no

$$2. \begin{cases} y > -9 \\ x \leq 7 \\ x > -3 \\ y < 9 \end{cases}$$



Is $(0,0)$ a solution?

yes