

Side w/ No Graphs:

May 16, 2007

6.8 Graphing Linear Inequalities in 2 Variables

Linear Inequalities Can Be written
4 ways

$$ax + by < c$$

$$ax + by \leq c$$

$$ax + by > c$$

$$ax + by \geq c$$

* Standard Form of an ^{Linear} Inequality

a, b, c are #'s (x, y) ordered
Pairs

Check whether the ordered pairs
are solutions of $2x - 3y \geq -2$

$$(0, 0) \quad 2(0) - 3(0) \stackrel{?}{=} -2$$
$$0 - 0 \stackrel{?}{=} -2$$

True...

$(0, 0)$ is a solution $0 \geq -2$ ✓

$$(0, 1) \quad 2(0) - 3(1) \stackrel{?}{=} -2$$
$$0 - 3 \stackrel{?}{=} -2$$

False...

$(0, 1)$ is NOT a solution $-3 \not\geq -2$

$$(2, -1) \quad 2(2) - 3(-1) \stackrel{?}{=} -2$$
$$4 + 3 \stackrel{?}{=} -2$$

True...

$(2, -1)$ is a solution $7 \geq -2$ ✓

W/ Graphs Review

Recall: Graph

$$3x - y = 4$$

$-3x$

$-3x$

let's get it into

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

Slope Int. form

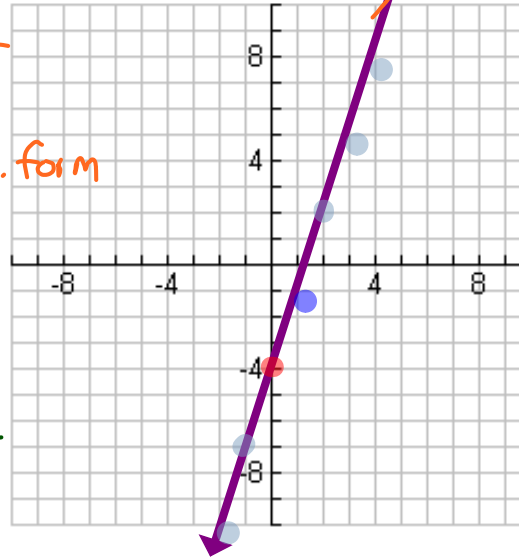
$$y = 3x - 4$$

$y = mx + b$

$$m = \text{slope} = 3 \quad \frac{\text{up } 3}{\text{Rt } 1}$$

$$b = y\text{-int} = -4 \Rightarrow (0, -4)$$

Standard form.
to make it easy...



Graph

$$3x - y \geq 4$$

$$\begin{array}{r} -3x \\ \hline -y \geq -3x + 4 \end{array}$$

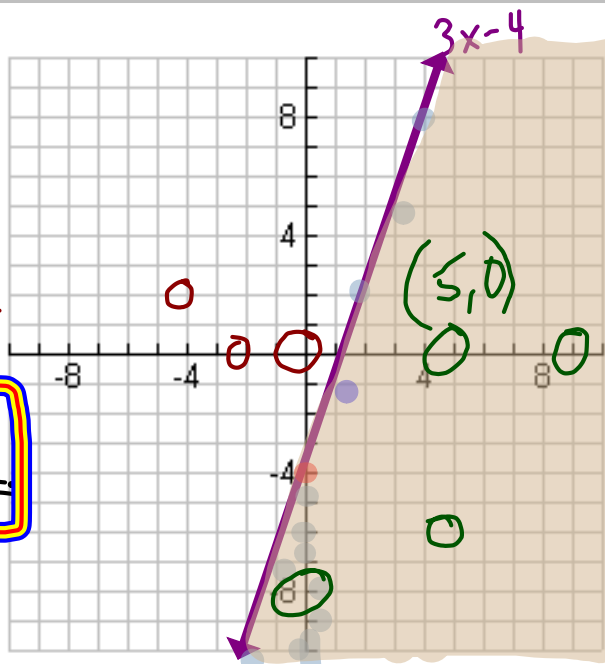
$$\begin{array}{r} -y \geq -3x + 4 \\ \hline -1 \quad -1 \quad -1 \\ \hline \end{array}$$

Do this 1st since ÷ by -1

$$y \leq 3x - 4$$

$$m = 3 \quad \frac{\uparrow 3}{\downarrow 1}$$

$$b = -4 \Rightarrow (0, -4)$$



Check good and bad!

Good (5,0)

$$3(5) - (0) \geq 4$$

$$15 - 0 \geq 4$$

$$15 \geq 4 \checkmark$$

True

$$3x - y \geq 4$$

Bad (0,0)

$$3(0) - (0) \geq 4$$

$$0 - 0 \geq 4$$

$$0 \geq 4$$

False

O.T.L.

① pg 370: 2, 5, 6, 7,
14-19 (all)

② Chapter 6 Test
Monday