Side w/ No Graphs:

May 16, 2007

6.8 Graphing Linear Inequalities in 2 Variables

Linear Inequalities Can Be written 4 ways

$ax+by<c$ $\quad ax+by>c$

$ax+by\leq c$ $\quad ax+by\geq c$

*Standard Form of an Inequality

Linear

$a, b, \& c$ are #'s $\quad (x, y)$ ordered Pairs

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

$(0, 0)$ (x, y)

$2(0) - 3(0) \stackrel{?}{\geq} -2$

$0 - 0 \stackrel{?}{\geq} -2$

$0 \geq -2$ ✓

True... $(0,0)$ is a Solution

$(0, 1)$

$2(0) - 3(1) \stackrel{?}{\geq} -2$

$0 - 3 \stackrel{?}{\geq} -2$

$-3 \not\geq -2$

False... $(0,1)$ is NOT a solution

$(2, -1)$

$2(2) - 3(-1) \stackrel{?}{\geq} -2$

$4 + 3 \stackrel{?}{\geq} -2$

$7 \geq -2$ ✓

True... $(2,-1)$ is a Solution

W/ Graphs Review

Recall: Graph

$3x - y = 4$ → Standard form. to make it easy ...

$-3x \quad -3x$ let's get it into

$-y = -3x + 4$ Slope Int. form

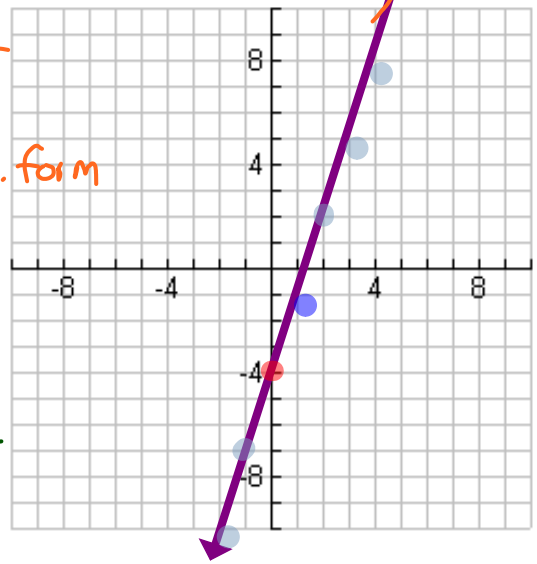
$\frac{-y}{-1} = \frac{-3x}{-1} + \frac{4}{-1}$

$y = 3x - 4$

$y = mx + b$

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

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



Graph

$3x - y \geq 4$

$-3x \quad -3x$

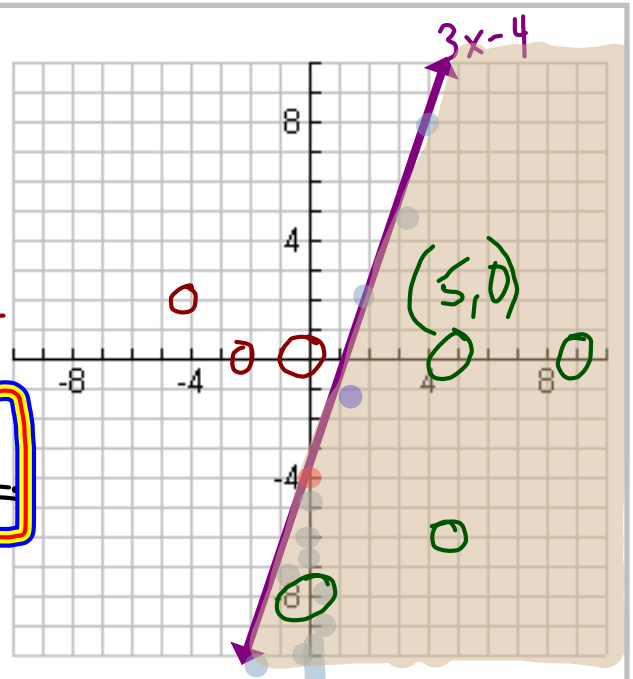
$\frac{-y}{-1} \geq \frac{-3x+4}{-1}$

$y \leq 3x - 4$

Do this 1st since ÷ by −1

$m = 3$ up 3 / right 1

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



$3x - y \geq 4$

Check good and bad!

Good (5, 0)

$3(5) - (0) \stackrel{?}{\geq} 4$

$15 - 0 \stackrel{?}{\geq} 4$

$15 \geq 4$ ✓

True

Bad (0, 0)

$3(0) - (0) \stackrel{?}{\geq} 4$

$0 - 0 \stackrel{?}{\geq} 4$

$0 \not\geq 4$

False

O.T.L.

① Pg 370: 2, 5, 6, 7, 14-19 (all)

② Chapter 6 Test Monday