Warm Up 12/3/18

Convert the following into slope-intercept form:

1. $2x - y > -14$

$-2x \quad -2x$

$\frac{-y}{-1} > \frac{-2x}{-1} \frac{-14}{-1}$

$\boxed{y < 2x + 14}$

2. $15x + 20y < -5$

$-15x \quad -15x$

$\frac{20y}{20} < \frac{-15x}{20} \frac{-5}{20}$

$\boxed{y < -\frac{3}{4}x - \frac{1}{4}}$

3. $3x + 5y = -12$

$-3x \quad -3x$

$\frac{5y}{5} = \frac{-3x}{5} \frac{-12}{5}$

$\boxed{y = -\frac{3}{5}x - \frac{12}{5}}$

4. $-2x - 10y = -45$

$+2x \quad +2x$

$\frac{-10y}{-10} = \frac{2x}{-10} \frac{-45}{-10}$

$\boxed{y = -\frac{1}{5}x + \frac{9}{2}}$

5. Landon ordered 3 sandwiches and 2 drinks from his favorite sandwich shop and it cost him $16.63. Jack ordered 4 sandwiches and 5 drinks and it cost him $24.25. What is the cost of a sandwich?

x = cost of sandwich

y = cost of drink

$5(3x + 2y = 16.63)$

$-2(4x + 5y = 24.25)$

$15x + \cancel{10y} = 83.15$

$+ \quad -8x - \cancel{10y} = -48.50$

$\frac{7x}{7} = \frac{34.65}{7}$

$x = \boxed{\$4.95}$

Linear Inequality

Similar to a linear equation, but uses an inequality symbol

Solution: All of the ordered pairs that make the inequality true

Determine which ordered pairs are solutions to the linear inequality below:

$$2x - 3y < 15$$

(2, 5)	(-1,- 7)	(3, -4)	(0, 0)
$2(2)-3(5)<15$ $4-15$ $-11<15$ yes	$2(-1)-3(-7)<15$ $-2+21<15$ $19<15$ NOT	$2(3)-3(-4)<15$ $6+12<15$ $18<15$ NOT	$2(0)-3(0)<15$ $0-0$ $0<15$ yes

Graphing linear inequalities is a way to show ALL the ordered pairs that are solutions! Steps to graph:	
Step 1	**Put the inequality in** Slope - intercept **form.** Be sure to flip the inequality symbol if you multiply or divide by a negative number!
Step 2	**Graph the line!** • Use a SOLID line for $\leq$ or $\geq$ symbols. • Use a DOTTED line for $<$ or $>$ symbols.
Step 3	**Shade!** • Shade above the line for $>$ or $\geq$ symbols. • Shade below the line for $<$ or $\leq$ symbols.

Example: $2x - 3y < 15$

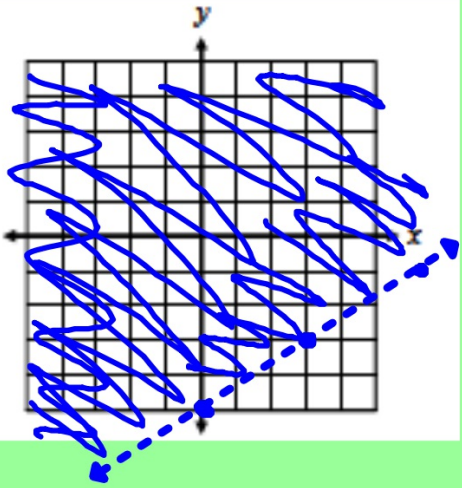
$$-2x \quad -2x$$

$$\frac{-3y}{-3} < \frac{-2x}{-3} + \frac{15}{-3}$$

$$\boxed{y > \frac{2}{3}x - 5}$$

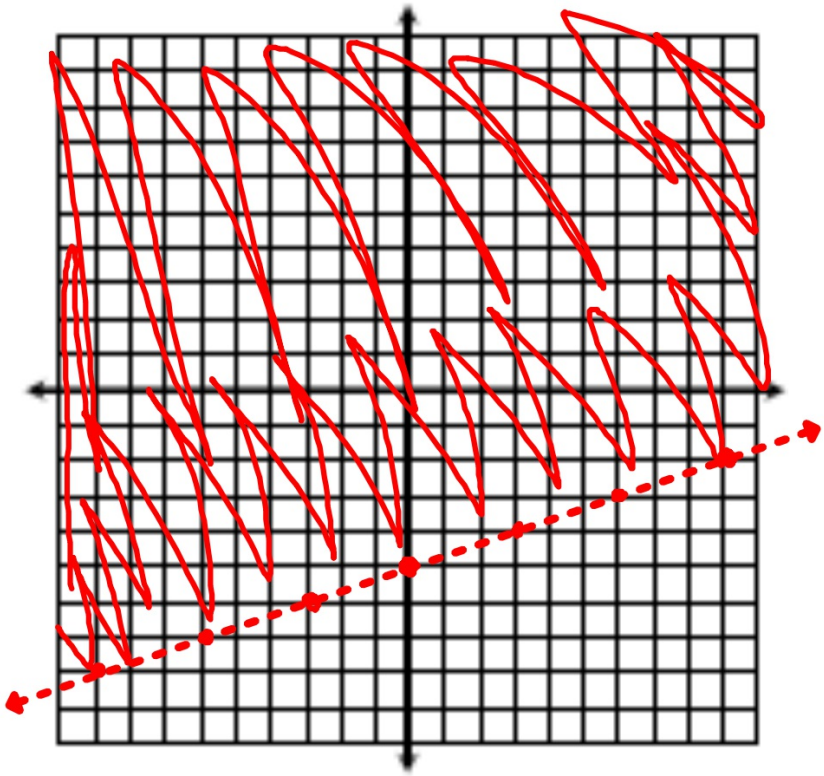
dotted

above



1. $y > \frac{1}{3}x - 5$

dotted

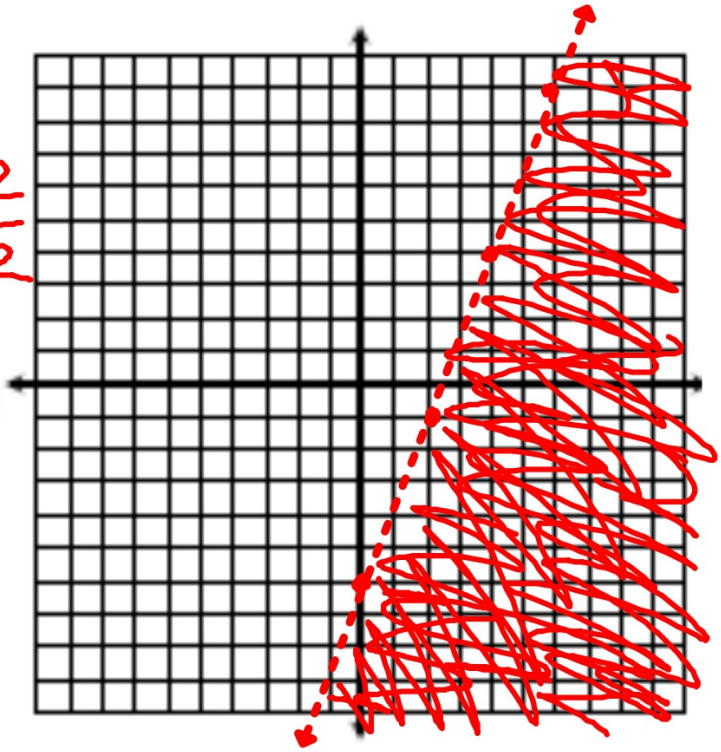


3. $\cancel{5x} - 2y > 12$

$\cancel{-5x} \quad -5x$

$$\frac{-2y}{-2} > \frac{-5x}{-2} + \frac{12}{-2}$$

$$y < \frac{5}{2}x - 6$$

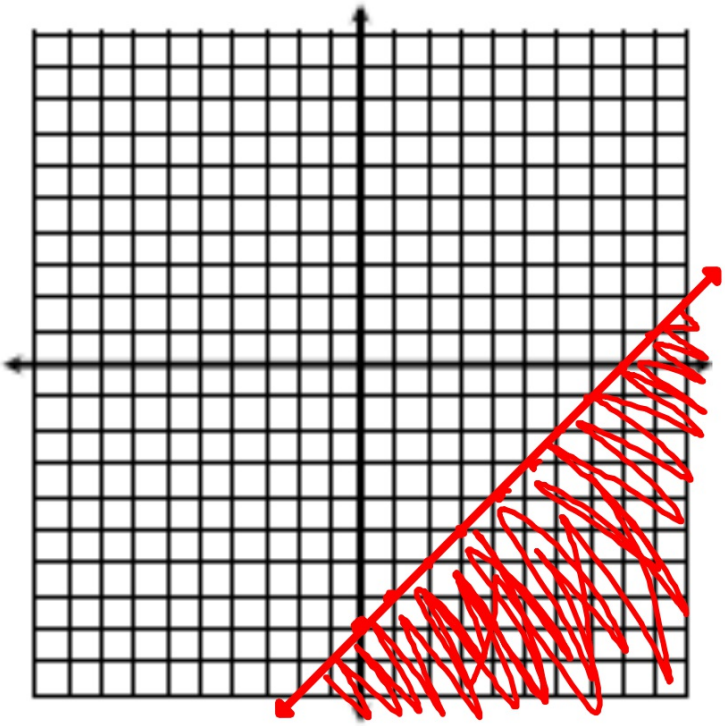
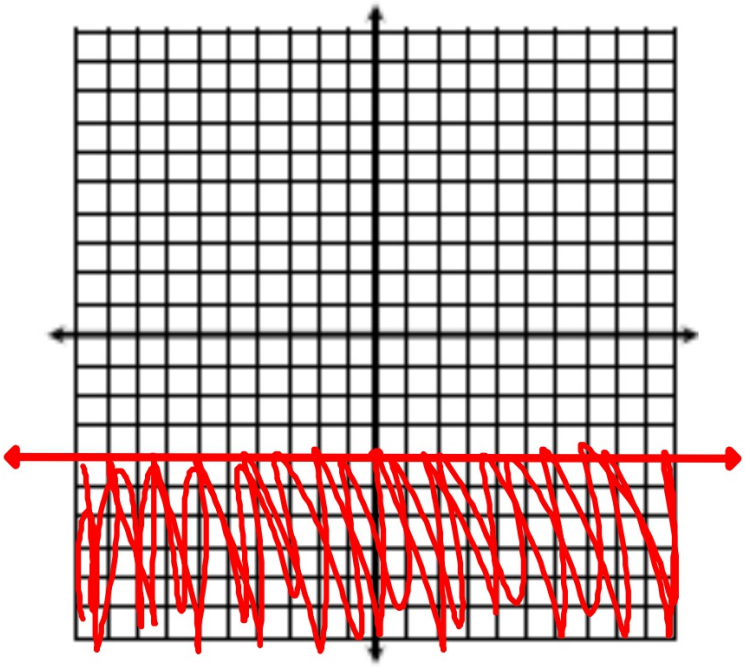


5. $\cancel{x} - y \geq 8$

$\cancel{-x} \quad -x$

$\frac{-y}{-1} \geq \frac{-x}{-1} + \frac{8}{-1}$

$y \leq x - 8$



7. $y \leq -4$