

WARM UP:

Solve each of the following for y:

$$\begin{array}{r} -4x + 2y \geq 8 \\ +4x \qquad +4x \\ \hline 2y \geq 4x + 8 \\ \frac{2y}{2} \geq \frac{4x}{2} + \frac{8}{2} \\ y \geq 2x + 4 \end{array}$$

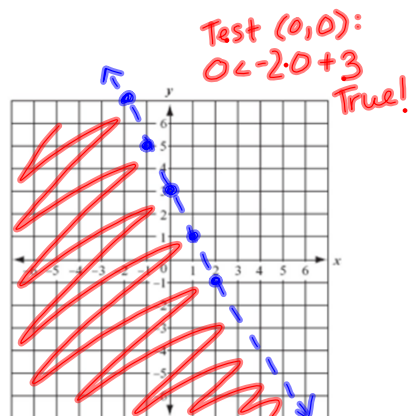
$$\begin{array}{r} 5x - 4y < -1 \\ -5x \qquad -5x \\ \hline -4y < -5x - 1 \\ \frac{-4y}{-4} < \frac{-5x}{-4} - \frac{1}{-4} \\ y > \frac{5}{4}x + \frac{1}{4} \end{array}$$

sign flipped b/c divided by negative

1. $y < -2x + 3$ *✓ dashed line*

$$\begin{aligned} y &= -2(-2) + 3 = 7 \\ y &= -2(-1) + 3 = 5 \\ y &= -2(0) + 3 = 3 \\ y &= -2(1) + 3 = 1 \\ y &= -2(2) + 3 = -1 \end{aligned}$$

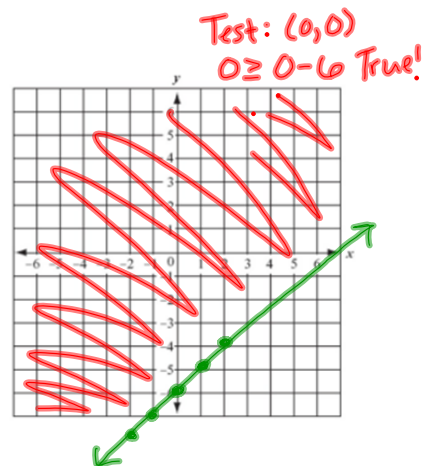
x	y
-2	7
-1	5
0	3
1	1
2	-1



2. $y \geq x - 6$

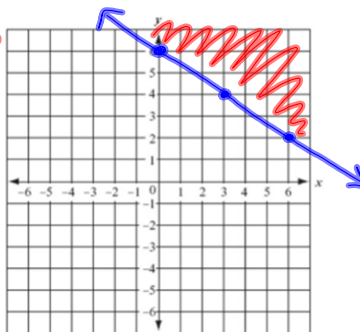
solid line!

x	y
-2	-8
-1	-7
0	-6
1	-5
2	-4



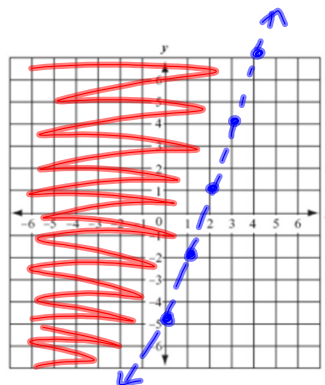
Learning Target: I can graph linear inequalities using the slope and y-intercept.

3. $-\frac{2}{3}x + 6 \leq y$
 slope: $m = -\frac{2}{3}$ ← go down 2, go right 3
 y-intercept: $b = 6$



Test (0, 0):
 $-\frac{2}{3}(0) + 6 \leq 0$
 $6 \leq 0$
 False!

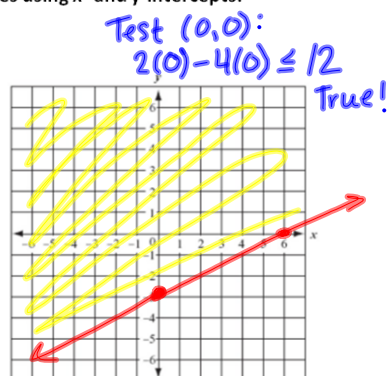
4. $y > 3x - 5$
 slope: $m = 3$
 y-intercept: $b = -5$



Test (0, 0):
 $0 > 3(0) - 5$
 $0 > -5$ True!

Learning Target: I can graph linear inequalities using x- and y-intercepts.

5. $2x - 4y \leq 12$
 1. x-intercept: (6, 0)
 2. y-intercept: (0, -3)
 $2x - 4(0) = 12$
 $\frac{2x}{2} = \frac{12}{2}$ $x = 6$
 $2(0) - 4y = 12$
 $\frac{-4y}{-4} = \frac{12}{-4}$ $y = -3$



6. $-x + 3y > 6$
 x-intercept: (-6, 0)
 y-intercept: (0, 2)

Test (0, 0):
 $-(0) + 3(0) > 6$
 $0 > 6$
 False!

