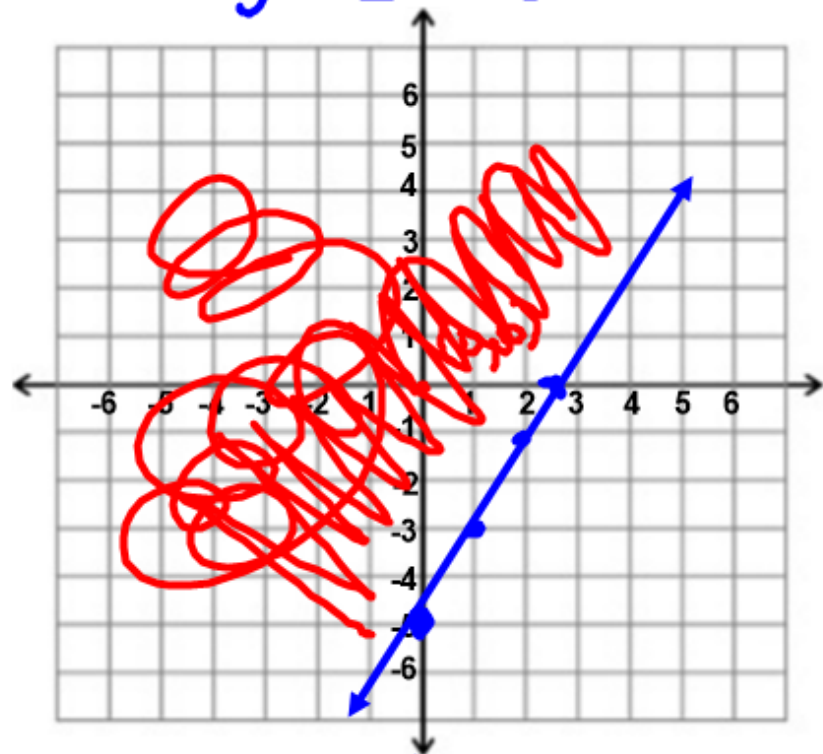


# **Lesson 2.8: Graphing Inequalities**

$\leq, \geq$  = Solid line  
 $<, >$  = dotted line

$$y \geq 2x - 5$$
$$y = 2x - 5$$



$$\underline{y \geq 2x - 5}$$

• Test Point:  $(x, y)$

$$0 \geq 2(0) - 5$$

$$0 \geq -5 \checkmark$$

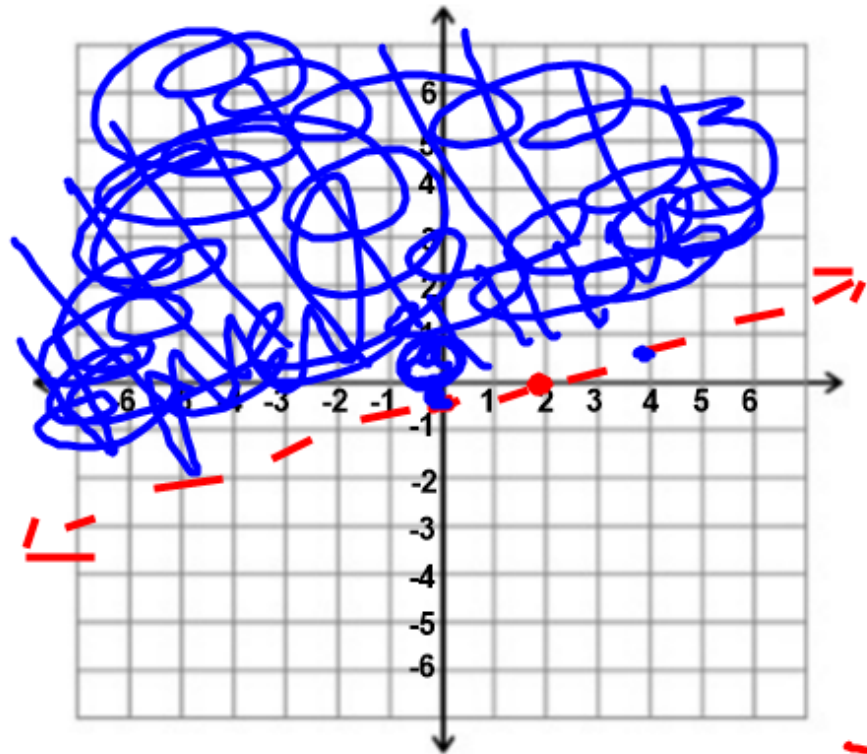


X-int.	Y-int.
$0 = 2x - 5$	$y = 2(0) - 5$
$5 = 2x$	$y = -5$
$x = 2.5$	

$$x - 4y < 2$$

Dotted line

(Standard form).



X-int.	Y-int.
$x - 4(0) = 2$	$0 - 4y = 2$
$x = 2$	$-4y = 2$
	$y = \frac{2}{-4}$
	$y = -\frac{1}{2}$

$$\begin{array}{r} x - 4y = 2 \\ -x \quad \quad -x \end{array}$$

$$\frac{-4y}{-4} = \frac{-x}{-4} + \frac{2}{-4} \rightarrow \boxed{y = \frac{1}{4}x - \frac{1}{2}}$$

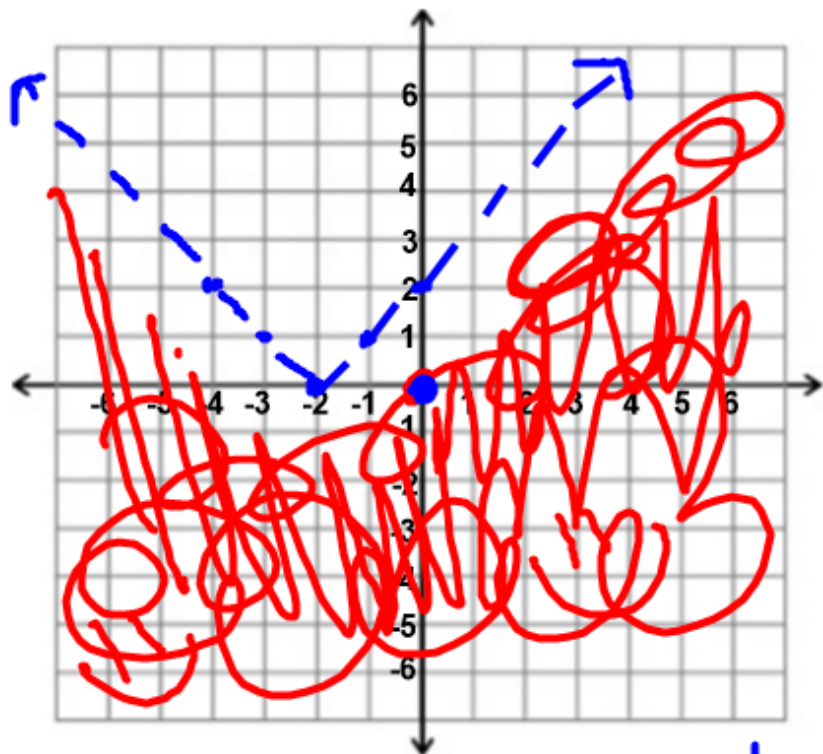
Test Point: (0, 0)

$$0 - 4(0) < 2$$

$$0 < 2 \checkmark$$

$(-2, 0)$

$$y < |x + 2|$$



Test:  $(0, 0)$

$$0 < |0 + 2|$$

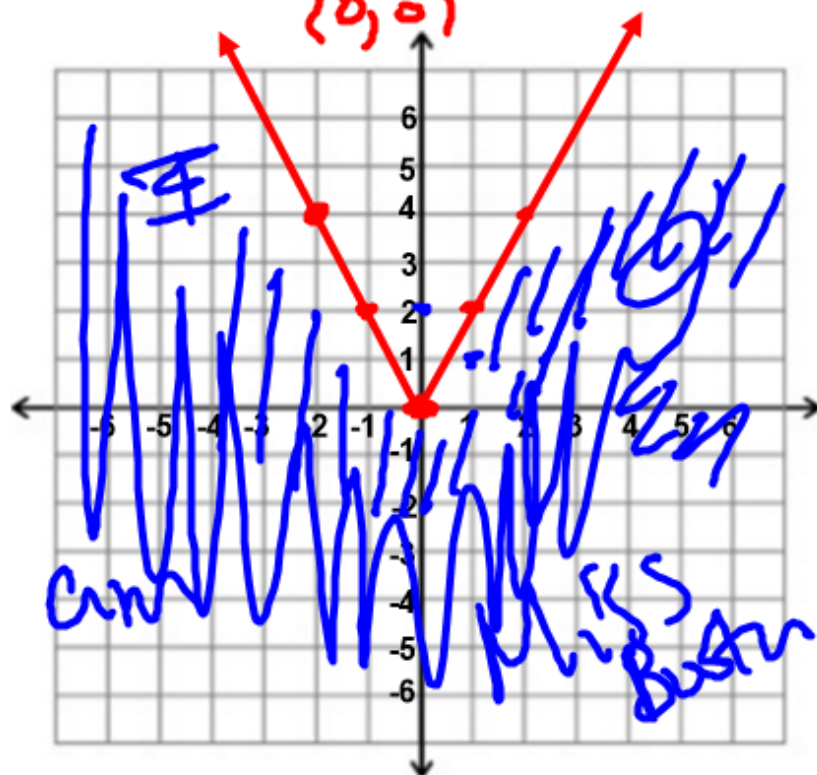
$$0 < 2 \checkmark$$

$(0, 2)$

$$2 \leq 2|0|$$

$$2 \leq 0 \times$$

$$y \leq 2|x - 1|$$



Test:  $(1, 1)$

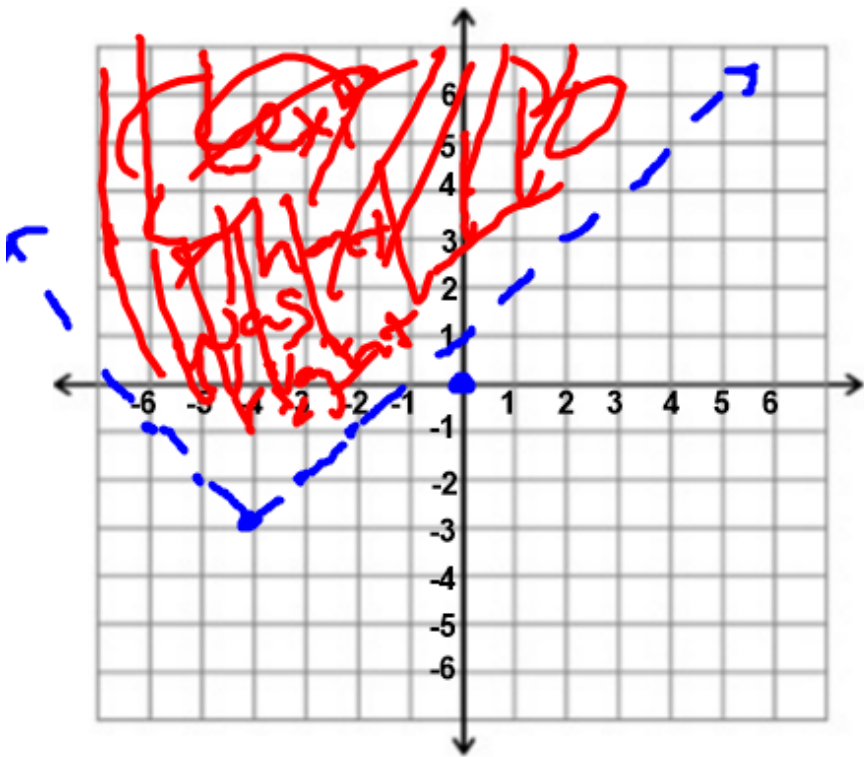
$$1 \leq 2|1|$$

$$1 \leq 2(1)$$

$$1 \leq 2 \checkmark$$

$$24) y > |x + 4| - 3$$

$(-4, -3)$



Test:  $(0, 0)$

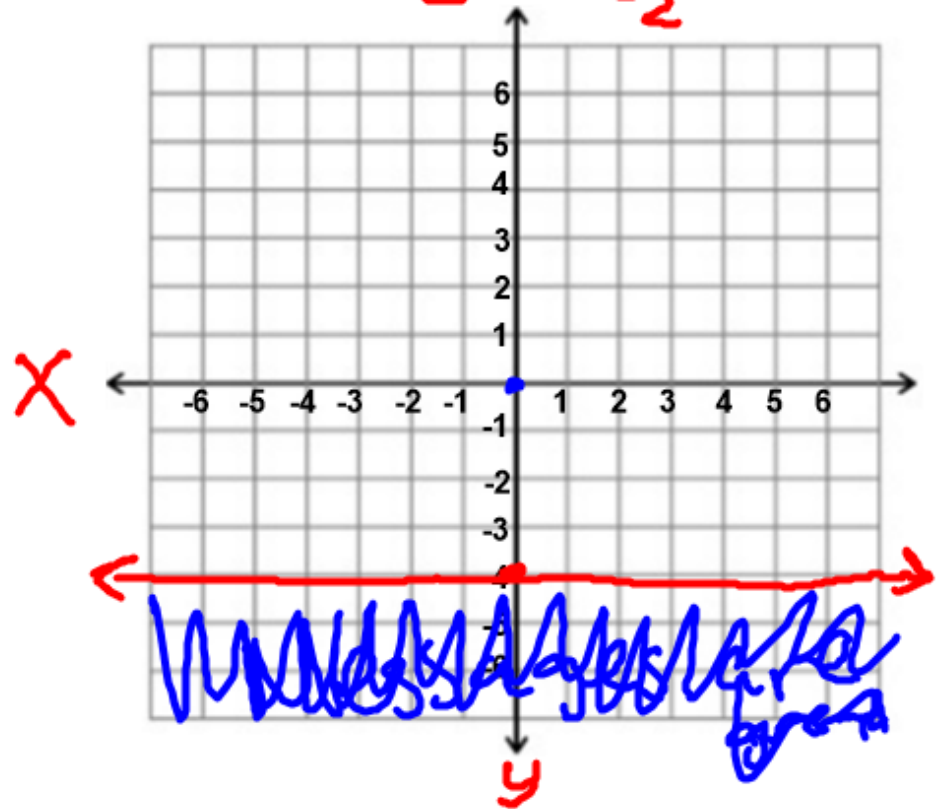
$$0 > |0 + 4| - 3$$

$$0 > |4| - 3$$

$$0 > 4 - 3$$

$0 > 1$   
False!

$$10) \frac{-2y}{-2} \leq \frac{8}{-2}$$



$$y \leq -4$$

Test:  $(0, 0)$

$$0 \leq -4$$

False!

Tell whether the given ordered pairs are solutions of the inequality.

$$2x - y < 4$$

$$\begin{matrix} (-5, -1) \\ x \quad y \end{matrix}$$

$$\underbrace{2(-5) - (-1)} < 4$$

$$-9 < 4$$

True.

yes,  $(-5, -1)$  is  
a solution.

$$\begin{matrix} (2, 0) \\ x \quad y \end{matrix}$$

$$\underbrace{2(2) - 0} < 4$$

$$4 < 4$$

False.

Not a solution.