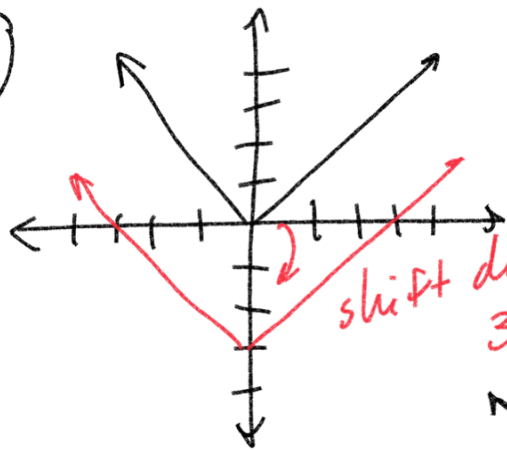


TH-A2 Algebra 2 Week 10

$y = |x| - 3$

(+) up
(-) down

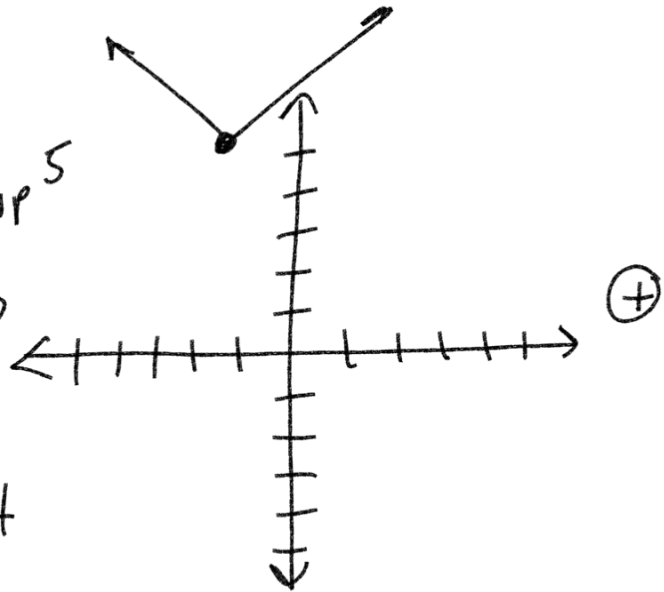


parent graph

$y = |x + 2| + 5$

(+) shift towards left

(-) shift towards right

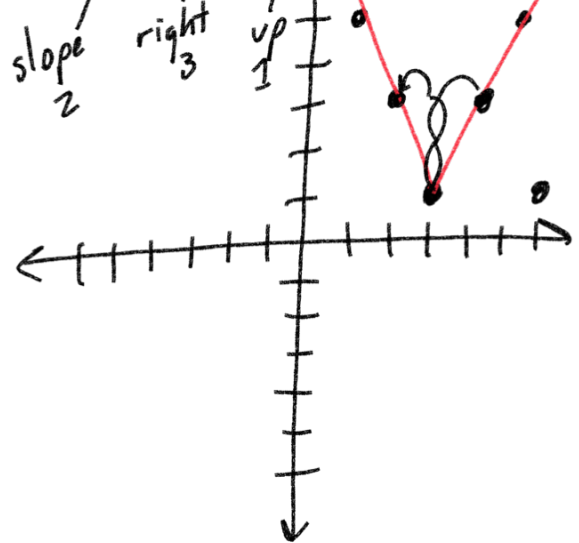


factor out coefficient

$y = |2x - 6| + 1$

$y = |2x - 6| + 1$

$y = |2(x - 3)| + 1$



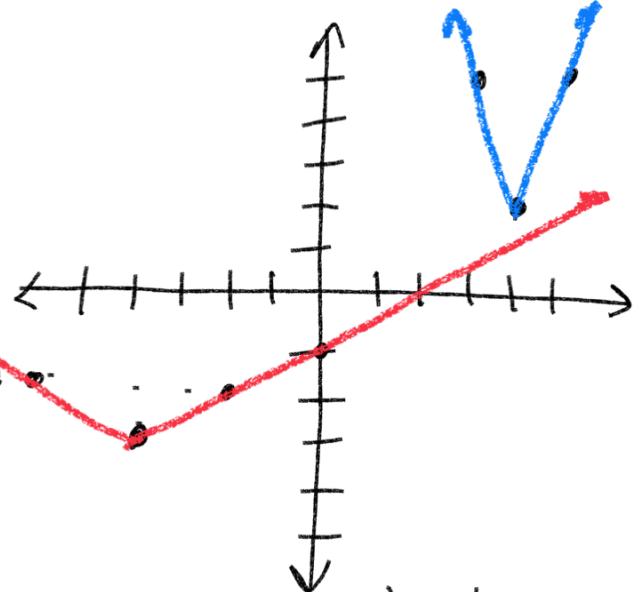
x	$ 2x - 6 + 1$	y
1	$ 2(1) - 6 + 1 = -4 + 1$	5 (1, 5)
2	$ 2(2) - 6 + 1 = -2 + 1$	3 (2, 3)
3	$ 2(3) - 6 + 1 = 0 + 1$	1 (3, 1)
4	$ 2(4) - 6 + 1 = 2 + 1$	3 (4, 3)
5	$ 2(5) - 6 + 1 = 4 + 1$	5 (5, 5)

$$y = \left| \frac{1}{2}x + 2 \right| - 3$$

$$y = \left| \frac{1}{2}(x + 4) \right| - 3$$

$2 \div \frac{1}{2} = 2 \times \frac{2}{1}$
 flip
 slope $\frac{1}{2}$
 left 4

down 3



$$y = \left| 3x - 12 \right| + 2$$

$$y = \left| 3(x - 4) \right| + 2$$

$$y = |a(x-h)| + k$$

$a = \text{slope}$

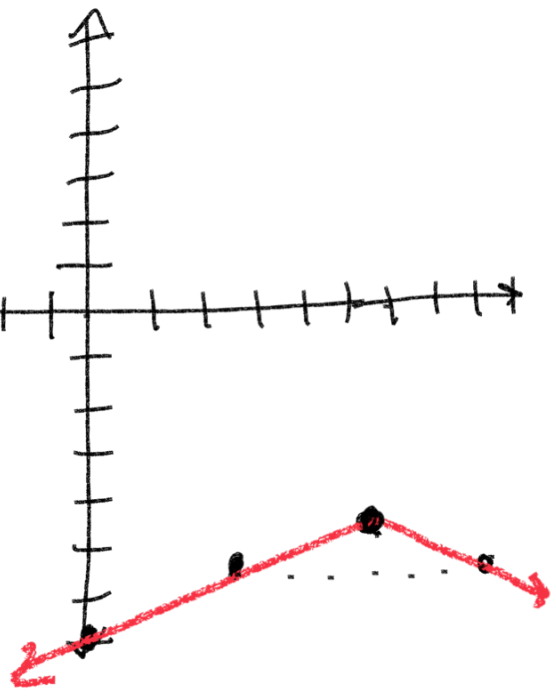
$(h, k) = \text{vertex}$

$a > 1$ sharp, acute

$a < 1$ wide

$y = \downarrow \left| \frac{1}{3}x - 2 \right| - 5$
 flip down $y = \left| \frac{1}{3}x - 2 \right| - 5$ \leftarrow down 5 $y = \downarrow \left| -\frac{1}{3}x - 2 \right| - 5$

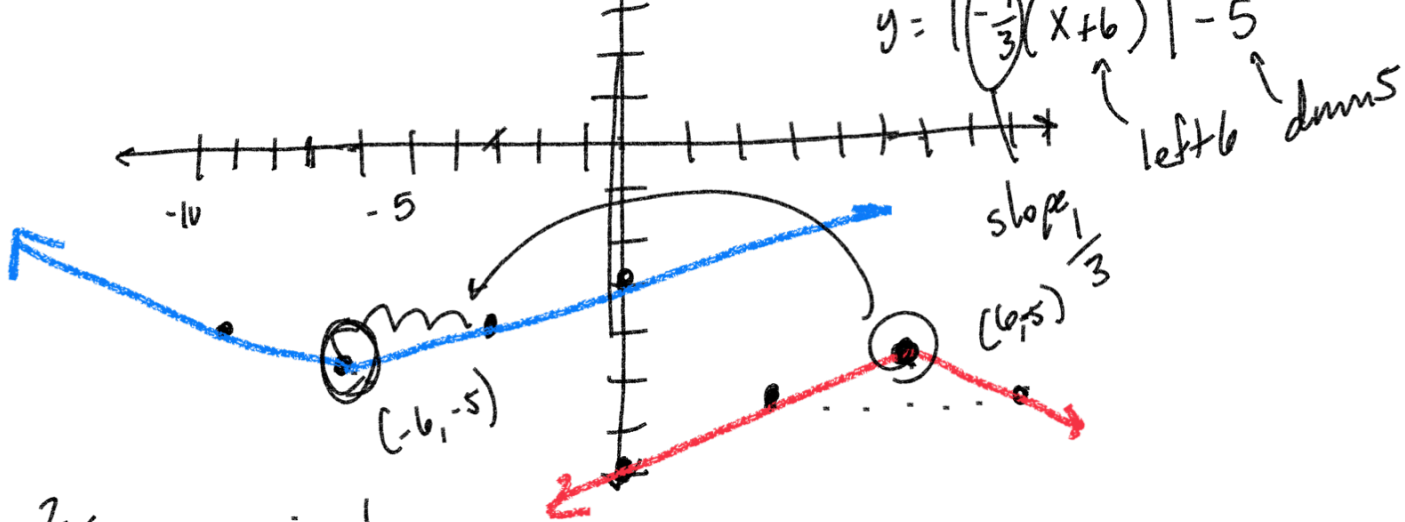
x	$-\left \frac{1}{3}x - 2 \right - 5$	y
0	$-\left \frac{1}{3}(0) - 2 \right - 5$ $- -2 - 5 = -2 - 5$	-7 (0, -7)
3	$-\left \frac{1}{3}(3) - 2 \right - 5$ $- 1 - 2 - 5 = - -1 - 5 = -1 - 5$	-6 (3, -6)
6	$-\left \frac{1}{3}(6) - 2 \right - 5$ $- 2 - 2 - 5 = 0 - 5$	-5 (6, -5)
9	$-\left \frac{1}{3}(9) - 2 \right - 5$ $- 3 - 2 - 5 = -1 - 5$	-6 (9, -6)



$y = \downarrow \left| -\frac{1}{3}x - 2 \right| - 5$

x	$\left -\frac{1}{3}x - 2 \right - 5$	y
-9	$\left -\frac{1}{3}(-9) - 2 \right - 5$ $ 3 - 2 - 5 = 1 - 5 = 1 - 5$	-4 (-9, -4)
-6	$\left -\frac{1}{3}(-6) - 2 \right - 5$ $ 2 - 2 - 5 = 0 - 5$	-5 (-6, -5)
-3	$\left -\frac{1}{3}(-3) - 2 \right - 5$ $ 1 - 2 - 5 = -1 - 5 = 1 - 5$	-4 (-3, -4)
0	$\left -\frac{1}{3}(0) - 2 \right - 5$ $ -2 - 5 = 2 - 5 = -3$	-3 (0, -3)

$$\sum y = \text{AIP} \left| \left(\frac{1}{3}x - 2 \right) - 5 \right| \quad \text{down } \frac{1}{5} y = \left| \left(\frac{1}{3}x - 2 \right) - 5 \right|$$



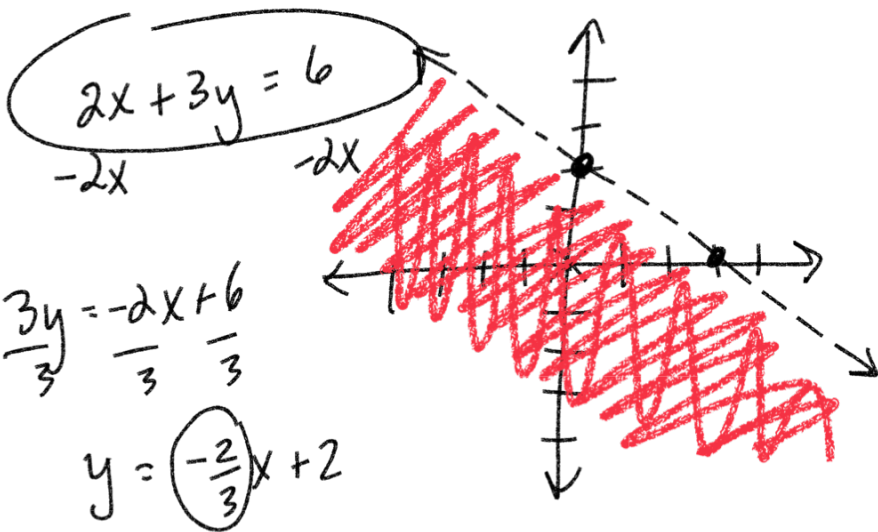
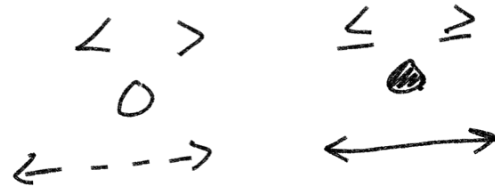
$$-2 / -1/3 \quad -2 \div -1/3$$

$$\downarrow \downarrow$$

$$-2 * -3 = 6$$

2-7 Two-Variable Inequalities

$$2x + 3y < 6$$



(0, 0)

$$2(0) + 3(0) < 6$$

$$0 + 0 < 6$$

$$0 < 6 \quad \text{true!}$$

$$\frac{3y}{3} = \frac{-2x + 6}{3}$$

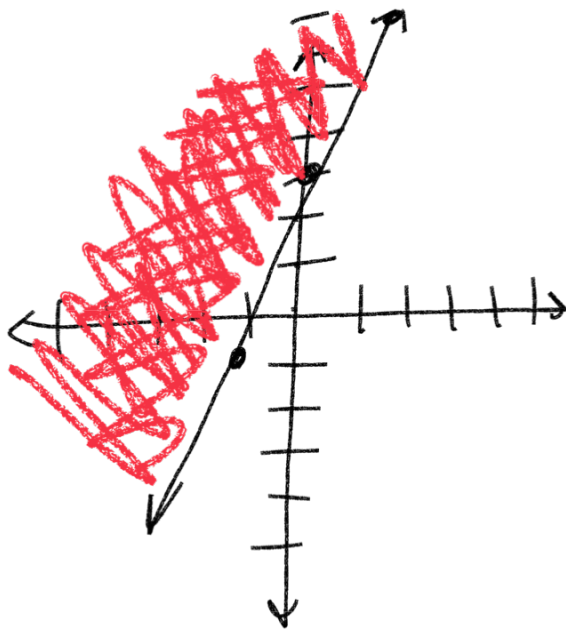
$$y = \left(\frac{-2}{3}x + 2 \right)$$

$$y \geq 4x + 3$$

$(0, 0)$

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

$$0 \geq 3 \text{ false}$$



$$y > |x - 4| + 2$$

4 right

2 up

check $(4, 2)$

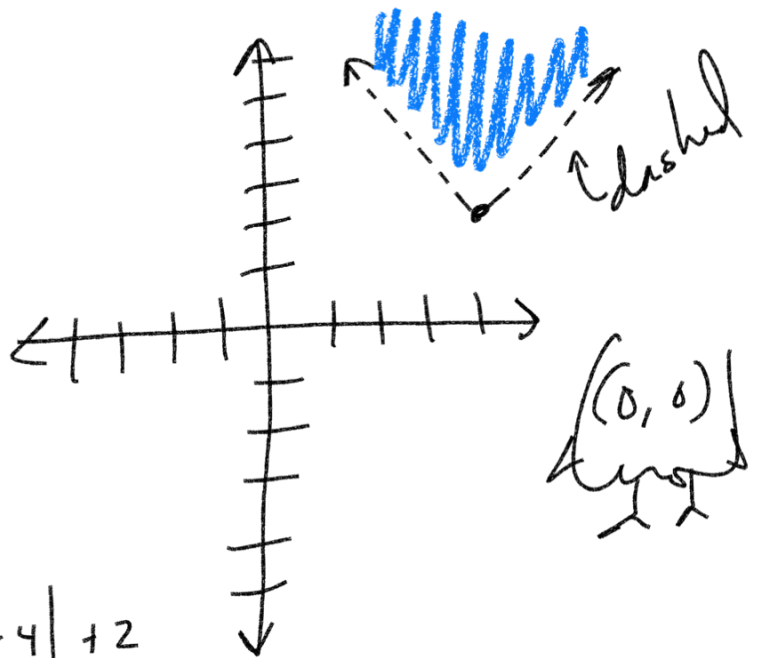
$(0, 0)$
-1 -1

$$0 > |0 - 4| + 2$$

$$0 > |-4| + 2$$

$$0 > 4 + 2$$

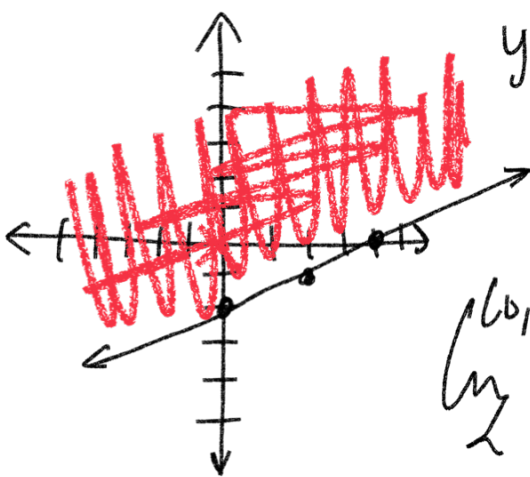
$$0 > 6 \text{ false}$$



$$\begin{array}{r} 2x - 4y \leq 8 \\ -2x \end{array}$$

$$\begin{array}{r} -4y \leq -2x + 8 \\ \hline -4 \quad \hline -4 \quad \hline -4 \end{array}$$

$$y > -3x + 4$$

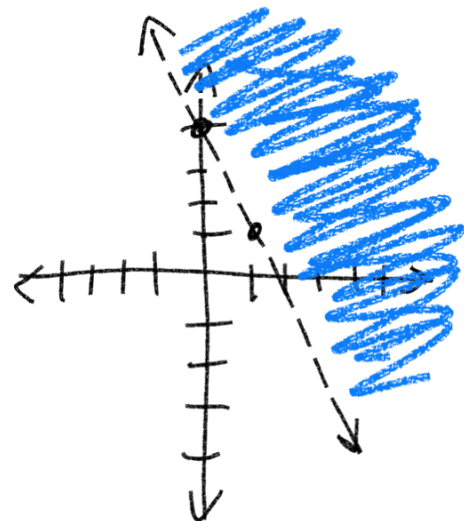


$$y \geq \frac{1}{2}x - 2$$

$(0, 0)$
 $\swarrow \searrow$

$$2(0) - 4(0) \leq 8$$

$$0 \leq 8 \text{ true}$$



$$0 > -3(0) + 4$$

$$0 > 4$$

Quiz 9
 due tonight

HW

ch 2-7 evens
 Supplemental WS
 Online HW 10 (Sun)
 Quiz 10 (Sun)
 due Nov 19th
 Pre-Test