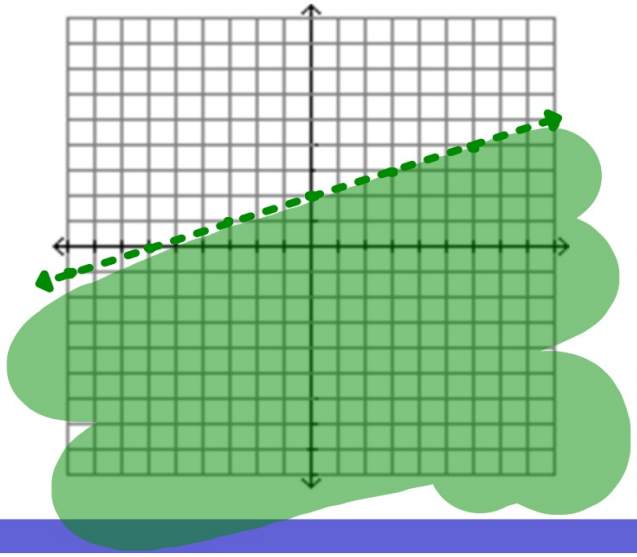
September 28, 2011

Warm-Up:

1. *Graph*: $y < \frac{1}{3}x + 2$

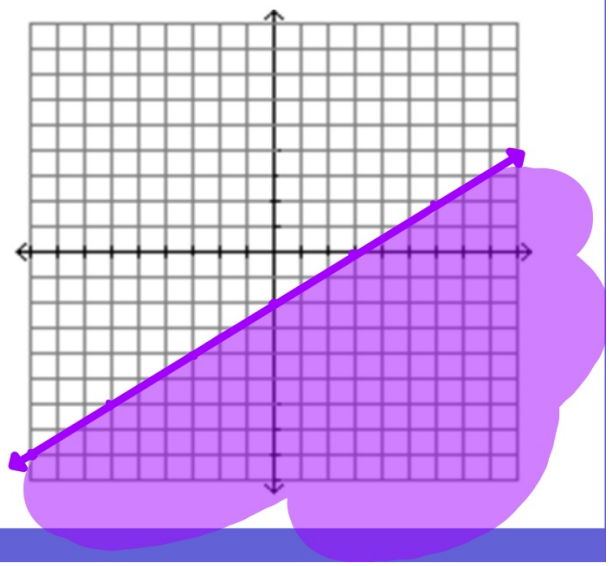


2. *Graph*: $2x - 3y \geq 6$

$-2x \quad -2x$

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

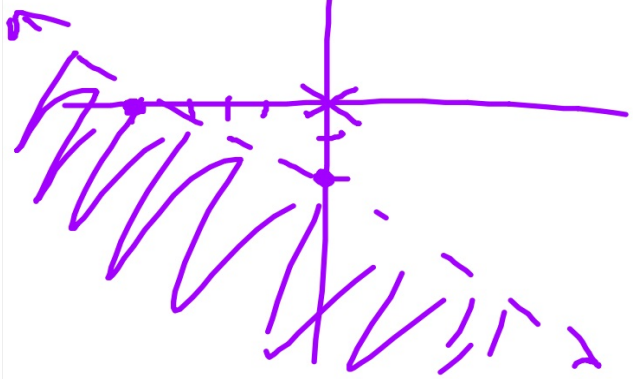
$y \leq \frac{2}{3}x - 2$



Get out Homework:
page 97 #17-36 All

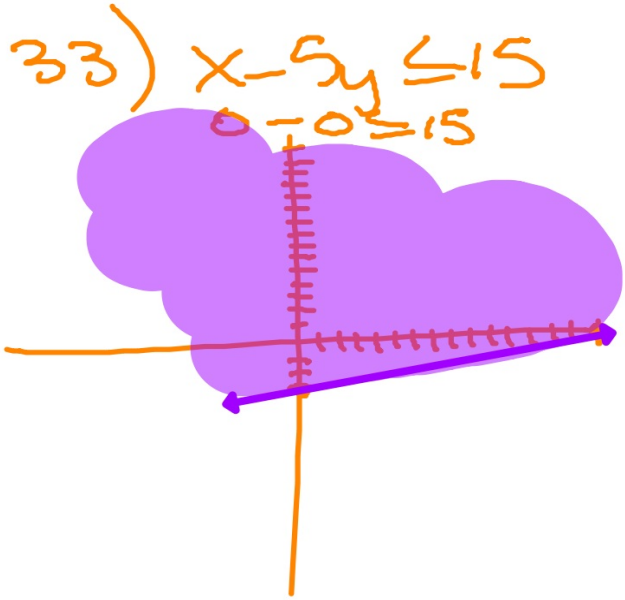
36) $2x + 4y < -8$

$0 + 0 < -8$



33) $x - 5y \leq 15$

$0 - 0 \leq 15$



9/28 - Graphs of Absolute Value Equations

Reminder:

$|x| = 1$

$x = ?$

$x = \pm 1$

or

$x = \{-1, 1\}$

or

$x = 1$ or $x = -1$

$|x + 3| = 2$

$x = ?$

$x + 3 = 2$ or $x + 3 = -2$

$-3 \quad -3 \qquad -3 \quad -3$

$x = -1$ or $x = -5$

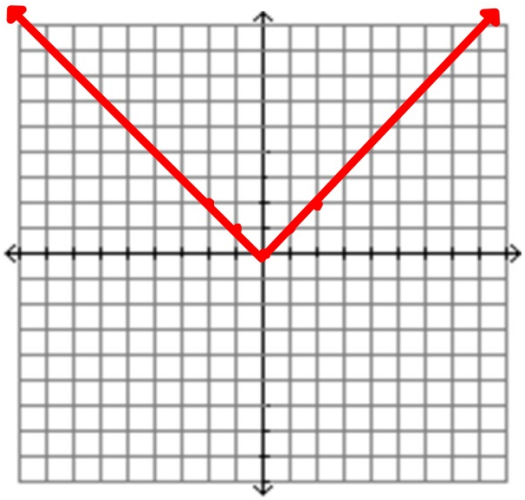
$x = \{-1, -5\}$

Graph:

$$y = |x|$$

When in doubt,
t-chart

x	y
0	0
1	1
2	2
-1	1
-2	2



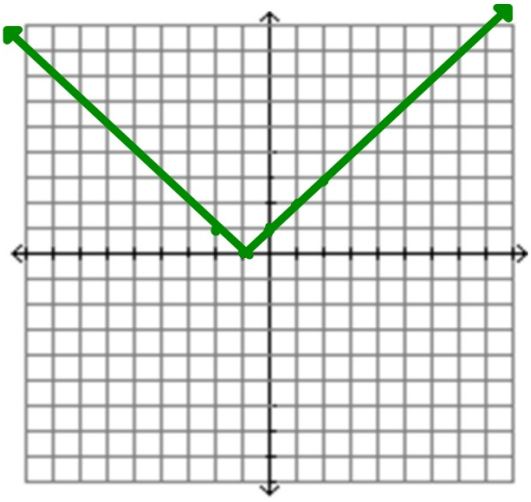
"Parent Graph'

Graph:

$y = |x + 1|$

opposite direction of +1

x	y
0	|1| = 1
1	|2| = 2
2	|3| = 3
-1	|0| = 0
-2	|-1| = 1

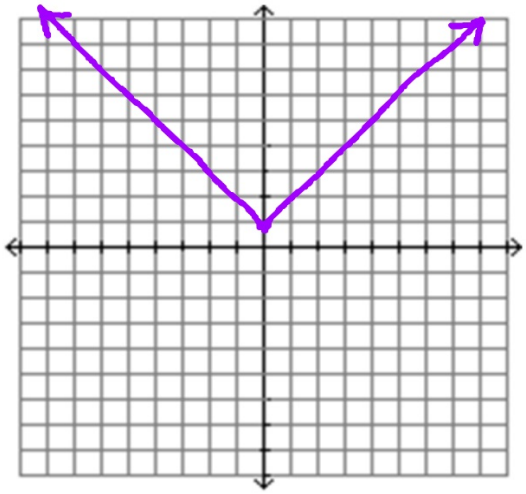


How did it transform?

left 1

Graph:

$$y = |x| + 1$$

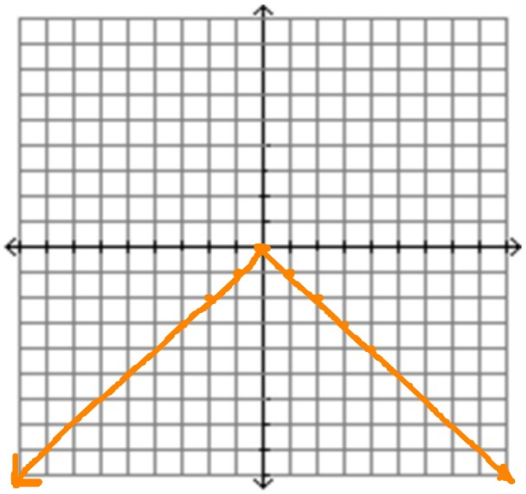


How did it transform?

up 1

Graph:

$$y = -|x|$$



How did it transform?

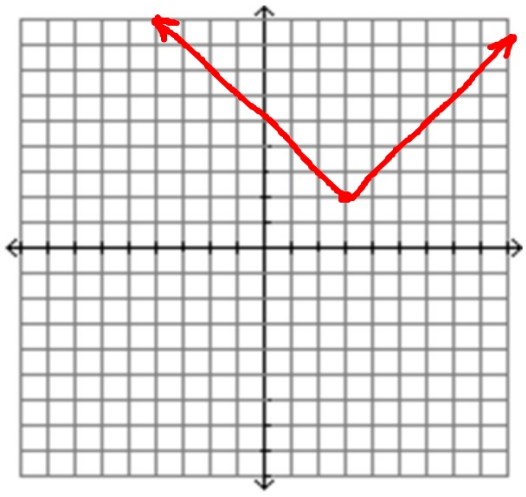
flip

Graph:

$$y = |x - 3| + 2$$

Right 3

up 2

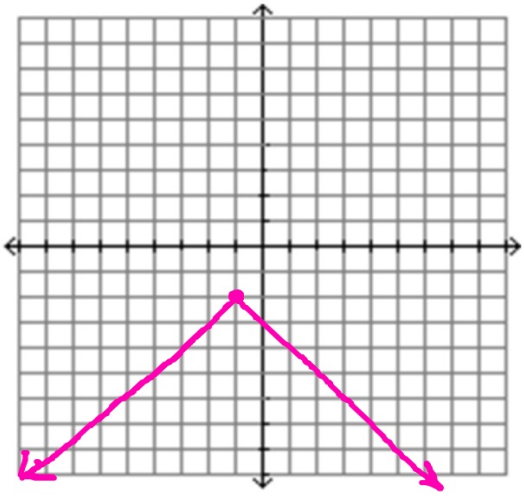


How did it transform?

Graph:

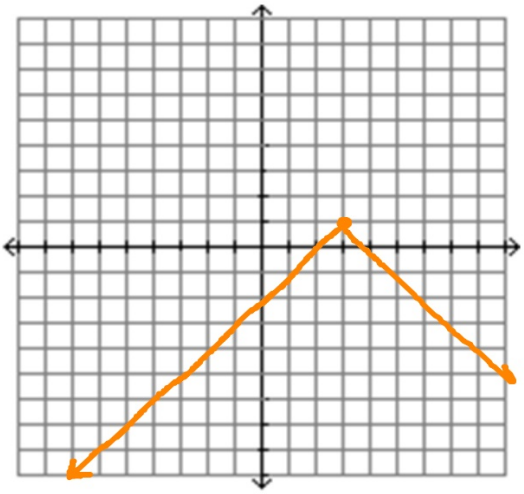
$$y = -|x+1| - 2$$

flip left down



$$y = -|x-3| + 1$$

flip Right up



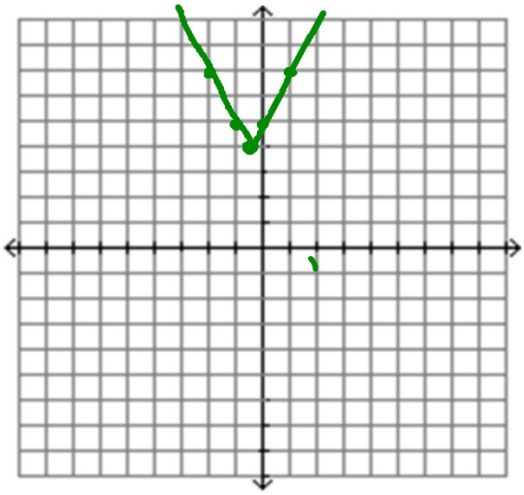
Graph:

opposite

$$y = |2x + 1| + 4$$

-1	$\lvert -2+1 \rvert + 4 = 5$
-2	$\lvert -4+1 \rvert + 4 = 7$
0	$\lvert 0+1 \rvert + 4 = 5$
1	$\lvert 2+1 \rvert + 4 = 7$

$\left(-\frac{1}{2}, 4\right)$



What does the 2 do to the graph?

Find the vertex of each without graphing.

$y = |x - 1| + 3$ (opp, same)

(1, 3)

$y = |2x + 1| + 4$

$\left(-\frac{1}{2}, 4\right)$

$y = -|x + 4| - 5$

(−4, −5)

$y = \left|\frac{1}{2}x - 3\right| - 6$

(6, −6)

$\frac{3}{\frac{1}{2}}$

$= 3 \div \frac{1}{2}$

$= 3 \cdot \frac{2}{1}$

$= 6$

Homework:

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#10-40 even
Skip 26, 28

due: Thurs.