

Algebra 2
2.6 Graphing Worksheet

Name _____

Date _____ Period _____

Graph the following functions on the same coordinate plane (solve for y , first...then make a table). **Write each equation next to its graph.** The graphs may overlap, so you may want to color each with a different colored pencil, pen, or marker. At the very least, highlight each boxed set in a different color.

1.

$$y = |x|$$

$$y - 2 = |x|$$

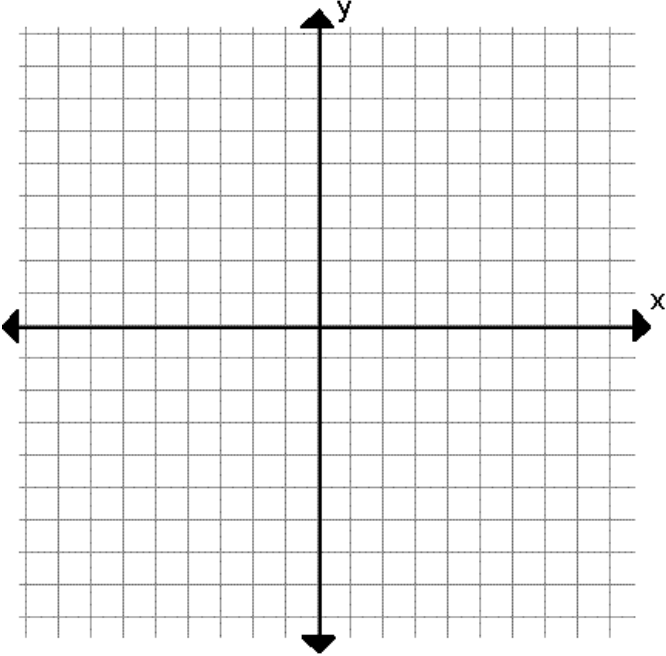
$$y - 4 = |x|$$

$$y - 6 = |x|$$

$$y + 2 = |x|$$

$$y + 4 = |x|$$

$$y + 6 = |x|$$



How does **subtracting a number from y** shift the graph? _____

How does **adding a number to y** shift the graph?

2.

$$y = |x|$$

$$y = |x - 2|$$

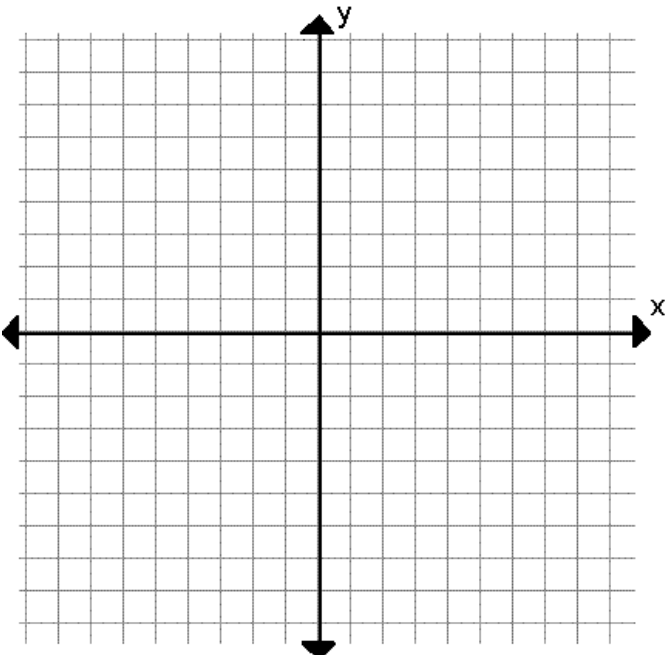
$$y = |x - 4|$$

$$y = |x - 6|$$

$$y = |x + 2|$$

$$y = |x + 4|$$

$$y = |x + 6|$$



How does **subtracting a number from x** shift the graph? _____

How does **adding a number to x** shift the graph?

3.

$$y = |x|$$

$$y = |2x|$$

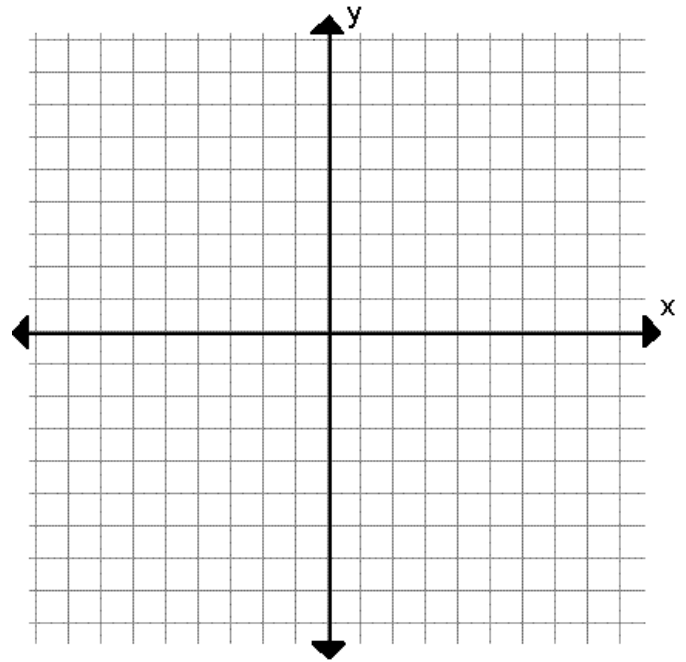
$$y = |4x|$$

$$y = |6x|$$

$$y = |x/2|$$

$$y = |x/4|$$

$$y = |x/6|$$



How does **multiplying x by an integer** affect the graph? _____

How does **dividing x by an integer** affect the graph? _____

4.

$$y = |x|$$

$$y = |x + 3|$$

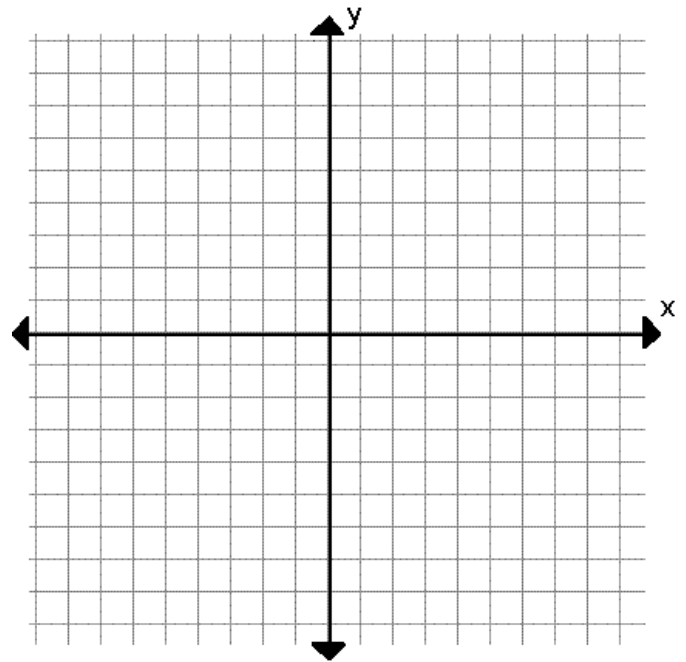
$$y = |x - 3|$$

$$y = -|x|$$

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

$$y = -|x - 3|$$

← take absolute value, *then* make it negative



What does a **negative outside of the absolute value** do to the graph? _____

5. Describe how the graph of $y + 3 = -|x + 2|$ differs from the graph of $y = |x|$.

6. Describe how the graph of $y = |3(x - 1)| + 4$ differs from the graph of $y = |x|$.