

Algebra 2
2.3 Graphing Lines Worksheet

Name _____

Date _____ Period _____

1. Fill in the blanks:

A linear equation in the form $y = mx + b$ is said to be in _____ - _____ form

m is the _____

b is the _____ - _____

To graph the line $y = 3x - 5$, first you make a point at the number _____ on the _____-axis.

Then, you rise _____ units and run _____ unit. Your second point is at (____, ____). Use the same process to get a third point at (____, ____). With a straightedge, draw a line through the three points. Be sure to extend your line to the edges of the grid and draw an _____ at each end!

2. Put each equation in **slope-intercept form**. Then **graph** the family of linear functions on the same coordinate plane (use a straight edge). Highlight each boxed set in a different **color**, and **write each equation** next to its graph.

Parent:

$y = \frac{1}{2}x$

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

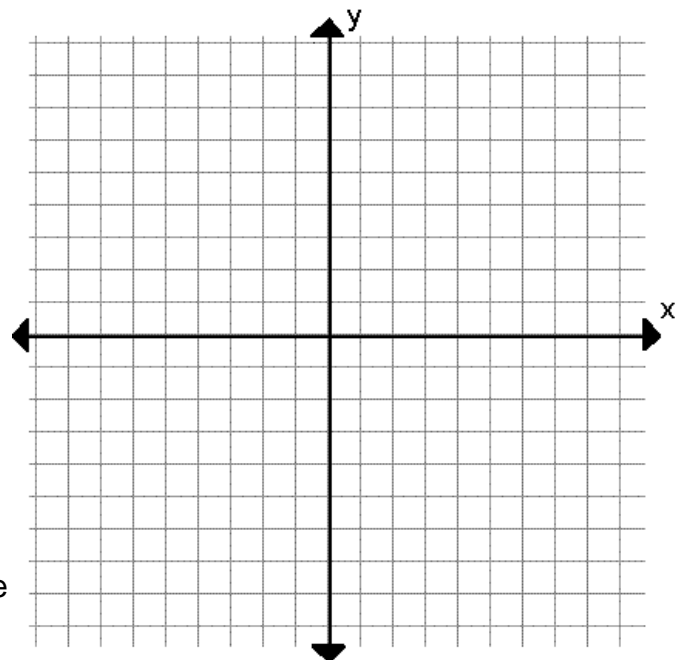
$y + 2 = \frac{1}{2}x$

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

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

$y - 6 = \frac{1}{2}x$

$y + 6 = \frac{1}{2}x$



How does subtracting a number from y affect the **vertical** positioning of the graph? _____

How does adding a number to y affect the **vertical** positioning of the graph? _____

3. **Graph** (same directions as #2—be sure to distribute the -2!!).

Parent:

$$y = -2x$$

$$y = -2(x - 2)$$

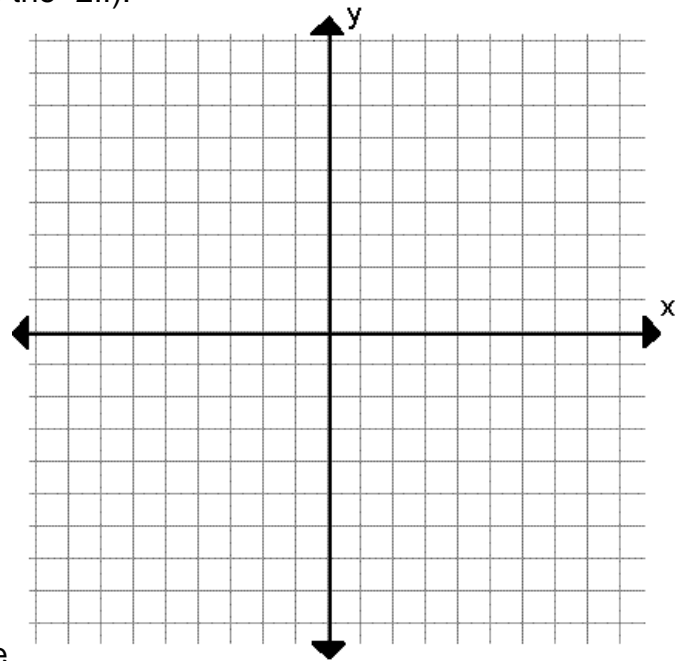
$$y = -2(x + 2)$$

$$y = -2(x - 4)$$

$$y = -2(x + 4)$$

$$y = -2(x - 6)$$

$$y = -2(x + 6)$$



How does subtracting a number from x affect the **horizontal** positioning of the graph? _____

How does adding a number to x affect the **horizontal** positioning of the graph? _____

4. **Graph** (again, same directions—remember, $x/2$ is the same as $\frac{1}{2}x$).

Parent:

$$y = x$$

$$y = 2x$$

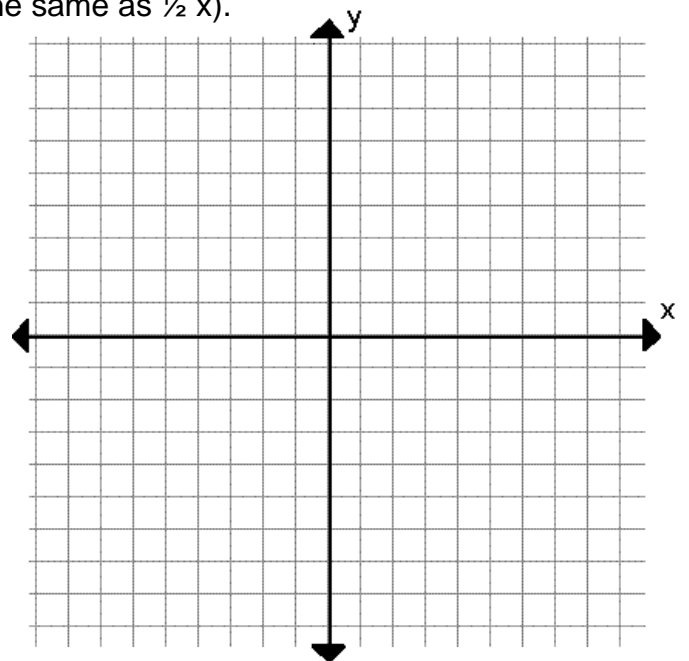
$$y = x / 2$$

$$y = 4x$$

$$y = x / 4$$

$$y = -6x$$

$$y = x / (-6)$$



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

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