

Module 5 Lesson 3

Math Lab: Exploring Graphs of Linear Functions

In this section you will investigate the equation of a line. You will need to use the “Linear Function Graph” applet to complete the Math Lab.

Once you have opened the “Linear Function Graph” applet, do the following:

- Select the “ $y = mx + b$ ” command tab.
- Drag the sliders to adjust m and b in $y = mx + b$.

Use the graphing applet to create the graphs for the following sets of equations:

Set 1	$y = x + 3$	$y = 2x + 3$	$y = \frac{1}{2}x + 3$	$y = -2x + 3$
Set 2	$y = x + 3$	$y = x + 1$	$y = x + 5$	$y = x - 3$

For each set, describe what changes and patterns you observed.

Analysis

- What happens to the graph as the b -value changes?
 - What does the b in the equation $y = mx + b$ represent?
- What happens to the graph as the m -value is changed?
 - What do you think the m in the equation $y = mx + b$ represents?
- How do changes in an equation of the form $y = mx + b$ affect the slope and y -intercept of a graph?