Unit 2 Language Of Geometry **Name:** _____
Day 10 Parallel and Perpendicular Lines Activity **Date:** _____ **Hour:** _____
(PH Lesson 3-6)

Investigating y = mx + b

Use a graphing calculator to explore the graphs of the following lines.

1. **Graph these equations on the same screen. Click: Zoom→ Square. Then answer the questions.**

   y = 2x **y = 2x + 2** **y =2 x – 2**

   a. **The graphs of these lines are _____.**

   b. **Where is the y-intercept of each line?_____**

   c. **What is the slope of each line? _____**

   d. **What can you conclude about parallel lines and their slopes?**

   _____

   _____

2. **What is the reciprocal of $\frac{2}{3}$?_____ What is the reciprocal of 2? _____**

3. **What is the opposite reciprocal of $\frac{1}{2}$? (opposite meaning the opposite sign) _____ .**

4. **What is the opposite reciprocal of 3? _____.**

5. **What is the opposite reciprocal of -4? _____.**

6. **Graph these equations on the same screen. Click: Zoom→ Square. Then answer the questions.**

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

a. **The graphs of these lines are _____.**

b. **What is the y-intercept of each line?_____**

c. **What is the slope of each line? _____**

d. **What can you conclude about the slopes of perpendicular lines?**

_____

_____

7. **Graph these equations on the same screen. Then answer the questions.**

y = - $\frac{1}{3}$x **y = 3x** **y = 3x - 2**

Which of these equations are parallel to each other? _____

Which have graphs that are perpendicular to each other? _____

Write a summary of the relationship between parallel and perpendicular lines.

_____

_____

_____

_____

Homework: Complete the parallel and perpendicular lines Day 10 worksheet