AA WS 5.6 – day 1 **Name:** _____

- *Parallel Lines* have the same slope but different *y*-intercepts.
- The slopes of *perpendicular lines* are opposite reciprocals.

Examples – Find the slope of a line parallel to the graph of the given equation.

1. $y = -9x + 2$

   Given line $m =$ _____

   Parallel line $m =$ _____

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

   Given line $m =$ _____

   Parallel line $m =$ _____

3. $6x + 2y = 4$

   Given line $m =$ _____

   Parallel line $m =$ _____

4. $y - 3 = 0$

   Given line $m =$ _____

   Parallel line $m =$ _____

Examples – Find the slope of a line perpendicular to the graph of the given equation.

5. $y = 7x - 6$

   Given line $m =$ _____

   Perpendicular line $m =$ _____

6. $y = -\frac{1}{3}x + 9$

   Given line $m =$ _____

   Perpendicular line $m =$ _____

7. $12x - 4y = 3$

8. $2x + 7y = 14$

Given line $m =$ _____

Perpendicular line $m =$ _____

Given line $m =$ _____

Perpendicular line $m =$ _____

Examples – Are the lines parallel, perpendicular, or neither? Explain.

Process – Write each line in slope intercept form, and then compare the slopes.

9. $y = 3x - 8$

$3x - y = -1$

10. $y = \frac{2}{3}x - 4$

$3x + 2y = -5$

11. $x = 10$

$y = -2$