Slope – Day 5 Name _____
Notes Date _____ Period _____

In some cases, it is not always easy to find the y-intercept on the graph of a line. In previous lessons, you were able to identify the y-intercept by looking at a graph or table of a linear relationship. Today, you will learn a way to identify the y-intercept by using another method. In order to find the y-intercept of a line, you must know the slope of the line.

Slope is $\frac{\text{vertical change}}{\text{horizontal change}} = \frac{\Delta y}{\Delta x}$

Given the coordinates of two points you can also find the slope with the slope formula:

(x_1, y_1) and (x_2, y_2) the slope is: $\frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

Find the slope of the line that passes through the two given points, and determine if the line is a function.

1. (7, 5) and (10, -1)

2. (3, -2) and (3, 4)

3. (-2, 8) and (8, 6)

4. (7, 9) and (11, 9)

The following formulas can be used to find the equation of a line.

Slope Intercept Form	**Point - Slope Formula**
$y = mx + b$ or $y = b + mx$	$y - y_1 = m(x - x_1)$

Find the equation of a line given a slope and a point on the line or given two points on the line.

5. Slope of the line is 2 and it passes through the point (4 , 6).

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6. Slope of the line is $\frac{1}{2}$ and it passes through the point (-2 , 3).

7. The line passes through the points (3 , 5) and (4 , 1).

8. The line passes through the points (-3 , -6) and (-12 , -6).

At noon, the temperature in Way Too Cold USA was 12°F. For the next 24 hours, the temperature fell by an average of 3°F per hour.

9. Write an equation for the temperature, *T*, *n* hours after noon.

10. What is the y-intercept of the equation? What does the y-intercept tell you about the situation?

11. What is the slope of the equation? What does the slope tell you about this situation?

12. What was the temperature at 7 p.m. in Way Too Cold?