

Agenda

- Homework:
 - Linear Equations: Point & Slope Worksheet
 - AM
- Materials:
 - Notebook
 - Whiteboard
 - Calculator (if needed)
- DO NOW
 - On the GRAPH part of your whiteboard:
 1. Sketch the point $(-1, 2)$
 2. Let's say that point is part of a LINEAR graph and the SLOPE is $+3$
 3. Graph the line



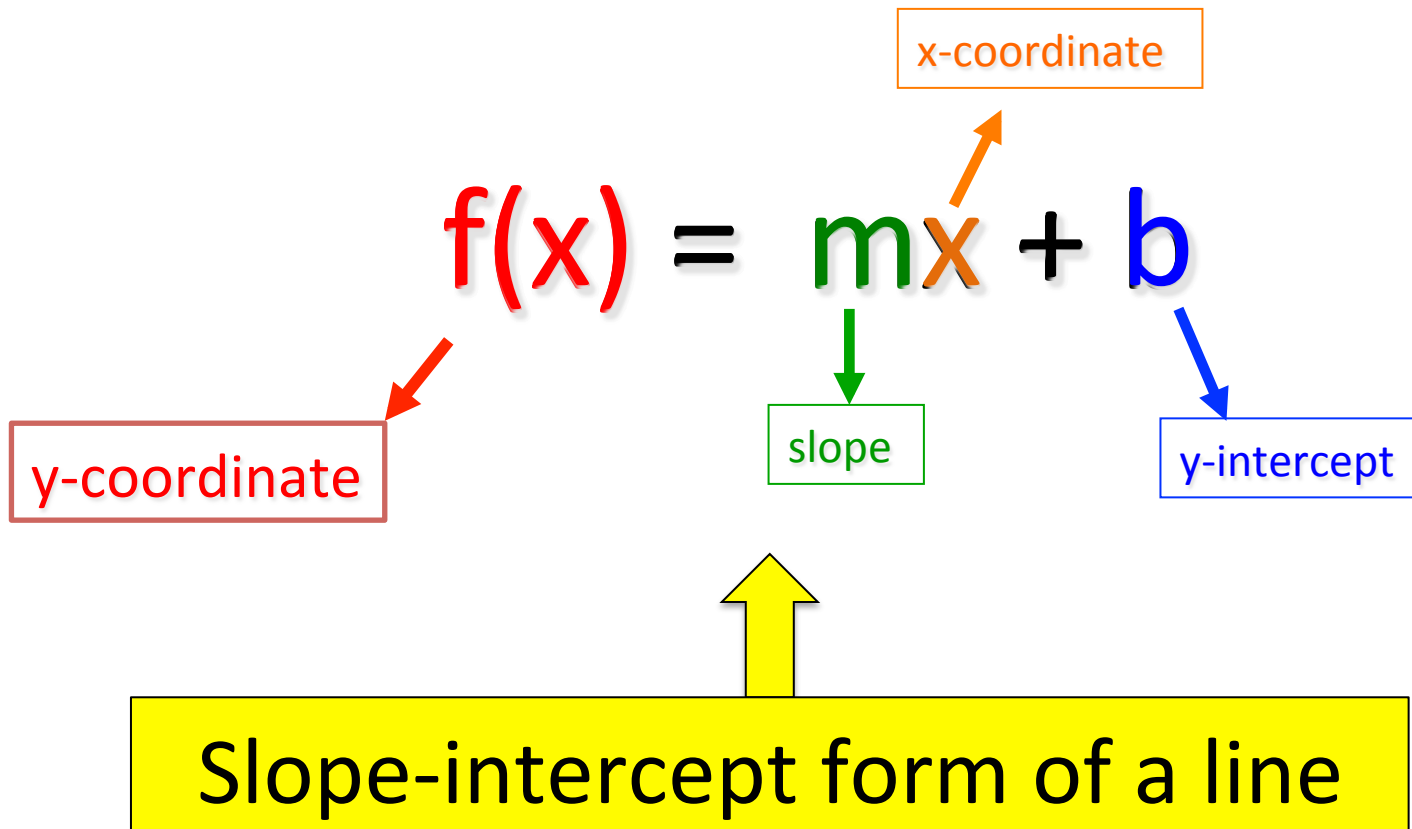
Set up Cornell Notes

- **Topic:** Linear Functions – Point Slope Equation of a Line
- **EQ:** How can we generate a linear function given the SLOPE and a POINT on the line?

Update Table of Contents

Date	Topic
11/23/15 (Pd 3)	Linear Functions – Point Slope Equation of a Line
11/24/15 (Pd 6)	

What do we already know about linear equations?



$$f(x) = mx + b$$

- It's easy to find the equation if we're given the slope (m) and y-int (b). Just plug it in!
- What if you were given the slope, and ANY point on the line?

How can you use the slope and a point to find the symbolic representation of the function?

$$f(x) = mx + b$$

$$2 = 3(-1) + b$$

$$2 = -3 + b$$

$$\begin{array}{r} +3 \quad \quad +3 \\ \hline \end{array}$$

$$5 = b$$

$$f(x) = mx + b$$

$$m = 3$$

Point (-1, 2)

What is the Point-Slope Form equation of a line?



$$y - y_1 = m(x - x_1)$$

The diagram illustrates the components of the point-slope form equation. A blue box labeled "Slope" has a blue arrow pointing down to the variable m in the equation. A red box labeled "Point (x_1, y_1) " has two red arrows: one pointing up to the y_1 term and another pointing up and to the right to the x_1 term.

How do you find the equation of a line
in point-slope form?



Find the equation of the line that
has a slope of 3, and passes
through the point (-1, 2)

$$y - y_1 = m(x - x_1)$$

How do you graph a linear function in point-slope form?

- Example: Graph $y - 1 = \frac{1}{2}(x + 2)$

Point-Slope Form:

$$y - y_1 = m(x - x_1)$$

Point (x_1, y_1) : $(-2, 1)$

Slope (m) : $\frac{1}{2}$

