Name:_____ Date:_____ Period:_____

Linear Equations in Slope-Intercept and Point-Slope Form using "Graphing Lines PhET Simulation"

By the end of this lesson, you will be able to:

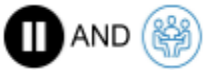
- Identify parts of linear equations in Slope-Intercept and Point-Slope Form
- Graph and write linear equations using Slope-Intercept or Point-Slope Form

1. Go to https://phet.colorado.edu/sims/html/graphing-lines/latest/graphing-lines_en.html

Play with the "Slope-Intercept" and "Point-Slope" tabs for 5 minutes.

Write down a couple of observations and/or questions that you have from each tab.

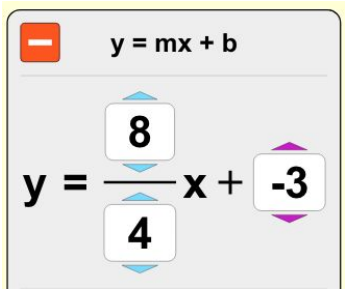
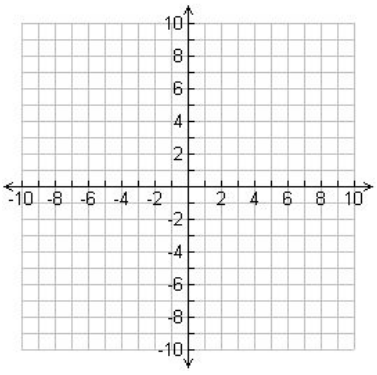
Slope-Intercept Tab:	Point-Slope Tab:

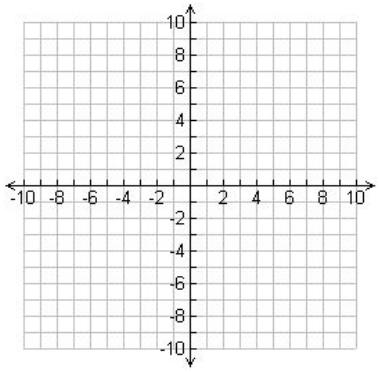


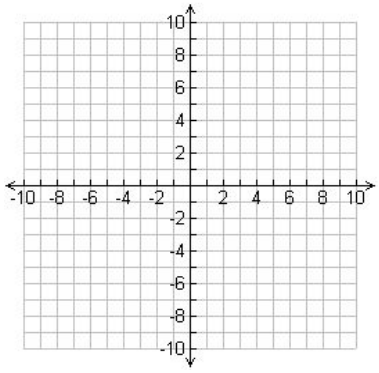
2. Go to the Slope-Intercept Tab.

What does the purple dot represent in the graph?	How does the blue dot effect the graph of the line?
	

Why do you think $y = mx + b$ is called **Slope-Intercept Form**?

Graph	
 Identify: $m =$_____ $b =$_____	

Graph the line that has $m = \frac{-2}{3}$ $b = 4$ Write the equation of the line $y = -\frac{2}{3}x + \_\_\_\_\_$	

Graph $y = x - 5$ Identify: $m = \_\_\_\_\_$ $b = \_\_\_\_\_$	

Describe how you would graph any linear equation in slope-intercept form: $y = mx + b$?

AND

3. Go to the Point-Slope Tab.

What do you notice about the purple dot?	What do you notice about the blue dot?
	

Why do you think $y - y_1 = m(x - x_1)$ is called **Point-Slope Form?**

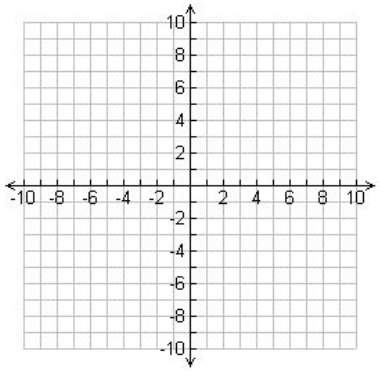
AND

Graph a line that goes through

$(-2,-5)$ and $(3,4)$

Write at least two equations of the line in Point-Slope Form:

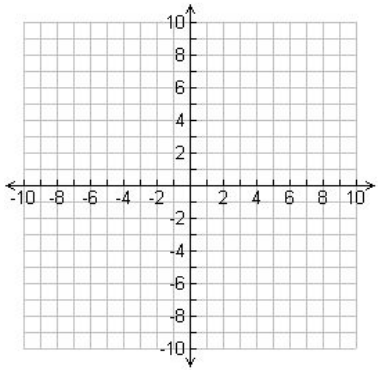
How many equations could you write?



Graph

$$y-1=\frac{1}{4}(x+3)$$

Identify: m = _____and point $(\_\_\_,\_\_\_)$ on the line.



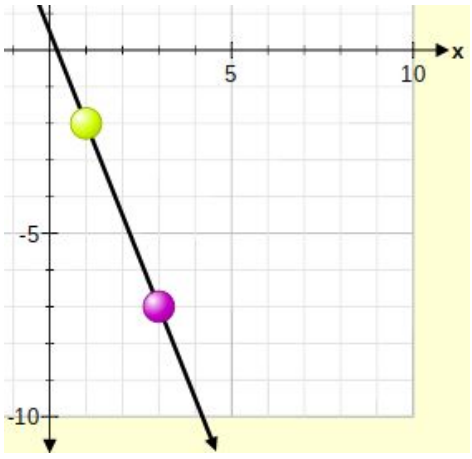
Identify: the 2 given points on the graph.

$(\_\_\_,\_\_\_)$ and $(\_\_\_,\_\_\_)$

Find the slope of the line: m = _____

Write the equation of the line in point-slope form:

$$y-\_\_\_=\_\_\_(x-\_\_\_)$$



AND

4. Play Line Game. Track your score for each level.

Level	1	2	3	4	5	6
Score						