

**Content and Language Objective:**

**SWBAT graph equations of a line in point-slope form, y-intercept form, and standard form using what they know about each form and be able to explain their process.**

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**Lesson 15: Graphing Equations of a Line**

**Date: October 6, 2015**

**Planner:**

- 1. Week 7 HW due Friday**
- 2. Week 7 Quiz Friday**
- 3. Retention Quiz Thursday**

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**Warm - Up**

**Convert to y-intercept form.**

1.  $3x - 4y = 24$   $y = -\frac{3}{4}x + 6$

$$\begin{array}{r|l} 3x & -3x \\ -4y & -24-3x \\ \hline -4 & -4 \quad -4 \end{array}$$

2.  $y = -5 - 6(x + 2)$   $y = -6x - 17$

$$y = -5 - 6x - 12$$

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Get your [GRAPHING  \$Y = MX + B\$](#)  worksheet out.

Pass it to the right one person.

Get a colored pen out.

Use the teacher key to grade.

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### GRAPHING Y-INTERCEPT FORM

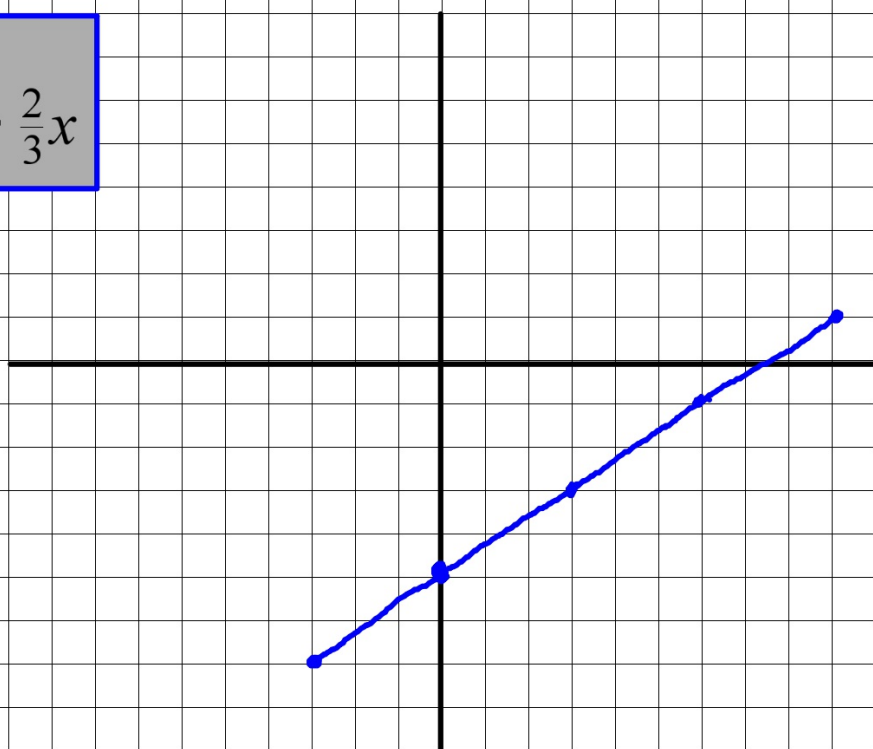
When graphing y-intercept form  $y = mx + b$ . Graph the y-intercept first and then from the y-intercept, use the slope to graph the next two points.

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Graph

$$y = -5 + \frac{2}{3}x$$



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## GRAPHING POINT-SLOPE FORM

When graphing point slope form given a point and a slope  $(x_1, y_1)$   $m$   
Write the equation in one of the two forms. Graph the point  $(x_1, y_1)$   
first and then use the slope to find the next two points.

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

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

When graphing pointslope form given two points,  $(x_1, y_1)$   $(x_2, y_2)$   
Graph the 2 points and then find the slope using graph  
Then write the equation using 1 of the 2 points and the slope  
from the graph

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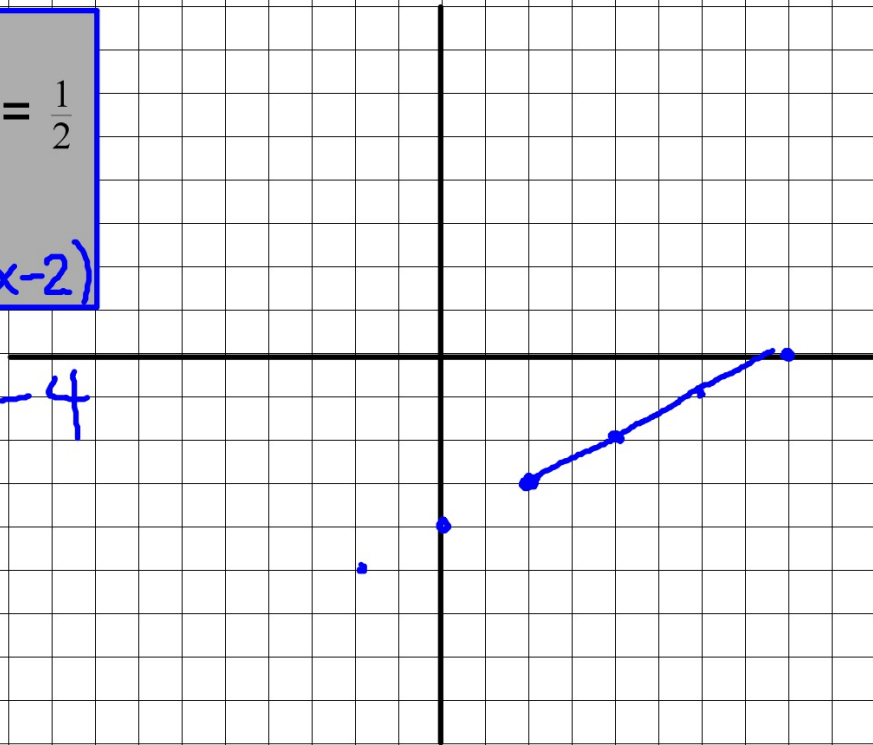
**Graph**

$$(2, -3) \quad m = \frac{1}{2}$$

**Equation:**

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

$$y = \frac{1}{2}x - 4$$



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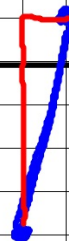
**Graph**

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

**Equation:**  $m = \frac{5}{1} = 5$

$$y = 1 + 5(x - 3)$$

$$y = -4 + 5(x - 2)$$





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When graphing standard form, \_\_\_\_\_, find the \_\_\_\_\_  
by substituting \_\_\_\_\_.

Write the coordinate pair \_\_\_\_\_.

Next find the \_\_\_\_\_ by substituting \_\_\_\_\_

Write the coordinate pair \_\_\_\_\_.

Graph the two points you just found, find the slope and write the equation in y-intercept form.

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$$2x + 3y = 18$$

**x-intercept:** \_\_\_\_\_

**y-intercept:** \_\_\_\_\_

**Equation:**

