

### **Content and Language Objective**

**SWBAT** manipulate a standard equation to intercept form and discuss what equivalent equations mean.

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### **Setup Notes**

### **Lesson 14: Equivalent Equations (Standard Form to Y-Intercept Form)**

**Date: October 5, 2015**

### **Planner:**

- 1. Week 7 Homework Due Friday**
- 2. Week 7 Quiz Friday**
- 3. Retention Quiz Thursday**
- 4. Grade Check Form Due Tuesday**

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### Warm-Up

Write an equation in point-slope form using the given information.

1. (3, 7) and (-2, -1)

$$\begin{array}{cc} x_1 & y_1 \\ x_2 & y_2 \end{array} \quad \frac{-1-7}{-2-3} = \frac{-8}{-5} = \frac{8}{5}$$

$$\begin{array}{ll} y-7 = \frac{8}{5}(x-3) & y-7 = \frac{8}{5}(x-3) \\ y+1 = \frac{8}{5}(x+2) & y+1 = \frac{8}{5}(x+2) \end{array}$$

Transform to y-intercept form.

2.  $y = 3 - 5(x - 2)$

$$\begin{array}{l} y = 3 - 5x + 10 \\ y = 13 - 5x \end{array}$$

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**We have been mentioning equivalent equations over the last few days, what does it mean to have equivalent equations?**

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### Point - Slope Form to Y-Intercept Form

$$y = -3 - 6(x - 2)$$

$$y = -6x + 9$$

$$y = -3 - 6x + 12$$

$$y = 9 - 6x$$

$$y + 4 = 7(x + 1)$$

$$\begin{array}{r} y + 4 = 7x + 7 \\ -4 \quad \quad -4 \\ \hline y = 7x + 3 \end{array}$$

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Given the equation  $-3x + 7y = 21$ , how would we write an equivalent equation.

$$\begin{array}{r} -3x + 7y = 21 \\ +3x \quad \quad +3x \\ \hline 7y = 21 + 3x \\ \frac{7y}{7} = \frac{21}{7} + \frac{3x}{7} \quad \frac{21+3x}{7} \\ y = 3 + \frac{3}{7}x \end{array}$$

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Given the equation  $2x - 6y = 24$ , write an equivalent equation.

$$\begin{array}{r} -2x \\ \hline -6y = 24 - 2x \\ -6 \quad -6 \quad -16 \\ \hline y = -4 + \frac{1}{3}x \end{array}$$

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Given the equation  $4x + 2y = 16$ , write an equivalent equation.

$$\begin{array}{r|l} 4x + 2y = 16 & \\ -4x & -4x \\ \hline 2y = 16 - 4x & \\ \frac{2y}{2} = \frac{16}{2} - \frac{4x}{2} & \\ y = 8 - 2x & \end{array}$$

