

Content and Language Objective:
SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Setup your notes

Lesson #11: Point - Slope From Using Two Points

Date: September 29,2015

Summary: I will write point-slope equations using two given points

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Warm-Up

1. Solve for x: $-2(3x + 6) = 4x + 5$

$$\begin{array}{rcl} -12 = 10x + 5 & & \\ -5 & & -5 \\ \hline -6x - 12 = 4x + 5 & & \\ +6x & & +6x \\ \hline -12 = 10x + 5 & & \\ -17 = 10x & & \\ \frac{-17}{10} = \frac{10x}{10} & & \left(\frac{-17}{10} = x \right) \end{array}$$

2. What does the equation $3x + 2 = 5x - 8$ mean?

$3x + 2$ is equivalent to $5x - 8$

Content and Language Objective:
SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

In your planner:

1. Grade check form due Wednesday 9/23³⁰

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Using the given information write in point-slope form, label your information and use both formats.

1. x_1, y_1 $m = -3$ $y - y_1 = m(x - x_1)$ $y = y_1 + m(x - x_1)$

$y + 1 = -3(x + 8)$

$y = -1 - 3(x + 8)$

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Yesterday you were given a point and slope and asked to write a point-slope equation in two different formats.

What happens when you are given two points? What do you think you would do?

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

plug them into the other y's and x's.

use the y intercept and x value to find slope

find the slope using the slope formula

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

When we are working with point-slope form we can also create an equation using two points.

In order to do this, we have to remember the slope formula.

Step 1. Find the slope using the given points. $m = \frac{y_2 - y_1}{x_2 - x_1}$

Step 2. Pick one of the points you used for slope and plug it into the point-slope form along with the slope.

Step 3. Pick the other point you used for slope and plug it into the point-slope form along with the slope.

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Let's try to write an equation in point-slope form given two points.

x_1 x_2
 y_1 y_2
(2, 4) and (-3, -5)

1. $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - 4}{-3 - 2} = \frac{-9}{-5} = \frac{9}{5} = m$

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

2. $y = 4 + \frac{9}{5}(x - 2)$ $y - 4 = \frac{9}{5}(x - 2)$

3. $y = -5 + \frac{9}{5}(x + 3)$ $y + 5 = \frac{9}{5}(x + 3)$

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

You try it!

(-5, 4) and (7, -2)

1. $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 4}{7 - (-5)} = \frac{-6}{12} = -\frac{1}{2} = m$

2. $y = 4 - \frac{1}{2}(x + 5)$ $y - 4 = -\frac{1}{2}(x + 5)$

3. $y = -2 - \frac{1}{2}(x - 7)$ $y + 2 = -\frac{1}{2}(x - 7)$

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to manipulate various situations with point-slope.

Look at the following equations and identify the slope and a point from the equation.

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

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

1. $y = 3 + 4(x - 5)$

$$m = 4$$
$$(5, 3)$$

2. $y + 1.9 = 2(x + 3.1)$

$$m = 2$$
$$(-3.1, -1.9)$$

3. $y = -3.47(x - 7) - 2$

$$m = -3.47$$
$$(7, -2)$$

4. $y - 5 = -1.38(x - 2.5)$

$$m = -1.38$$
$$(2.5, 5)$$

Content and Language Objective:

SWBAT write equations in point-slope form given two points and will be able to develop point-slope equations from real-world situations