

Objective: SWBAT calculate the slope of a line containing two points and explain verbally the meaning of the slope in the context of each problem.

Lesson 7: Slope with Two Points

Date: September 21, 2015

GRAB YOUR CLICKER

Objective: SWBAT calculate the slope of a line containing two points and explain verbally the meaning of the slope in the context of each problem.

Think-Pair-Share:

What is slope in a non-math context way?

steepness

Can you come up with real-world examples that involve slope and in what way?

hills
mountains

escalator
economy

stairs
slide

ladder
ramp

What is slope in a math context way?

$y = mx + b$

$\frac{\text{change in } y}{\text{change in } x}$

y and x axis
graphs

$\frac{\text{rise}}{\text{run}}$

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<http://www.youtube.com/watch?v=4JuAyiS9JqM>

While watching the video, please take notes on what is being taught and how slope is found in a math context way.

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What is the formula for finding slope?

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope of the line containing the points $(4, 6)$ and $(10, 14)$.
 x_1, y_1 x_2, y_2

1. Label your values accordingly
2. Use Your formula and substitute your values in the correct places.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{14 - 6}{10 - 4}$$

3. Simplify and leave in fraction form.

$$\frac{14 - 6}{10 - 4} = \frac{8}{6} = \frac{4}{3}$$

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Find the slope of $(-10, -6)$ and $(5, 7)$

$$\frac{7 - (-6)}{5 - (-10)} = \frac{13}{15}$$

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Clicker practice time! Find your clicker, and DO NOT turn it on while I pass out some practice problems.

Objective: SWBAT find the slope of a line on a graph using a slope triangle or the slope formula and be able to explain the process they used.

Warm Up

What is the formula for finding slope?

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

What is the slope of the line with points (2, 3) and (9, 5)?

$$m = \frac{5-3}{9-2} = \frac{2}{7}$$

$$\begin{array}{cc} x_1 & y_1 & x_2 & y_2 \\ \frac{3-5}{2-9} & = & \frac{-2}{-7} & = \frac{2}{7} \end{array}$$

Objective: SWBAT find the slope of a line on a graph using a slope triangle or the slope formula and be able to explain the process they used.

There are a variety of ways to find the slope, yesterday we looked at how to use the slope formula.

Today we are going to explore the graphing side of slope.

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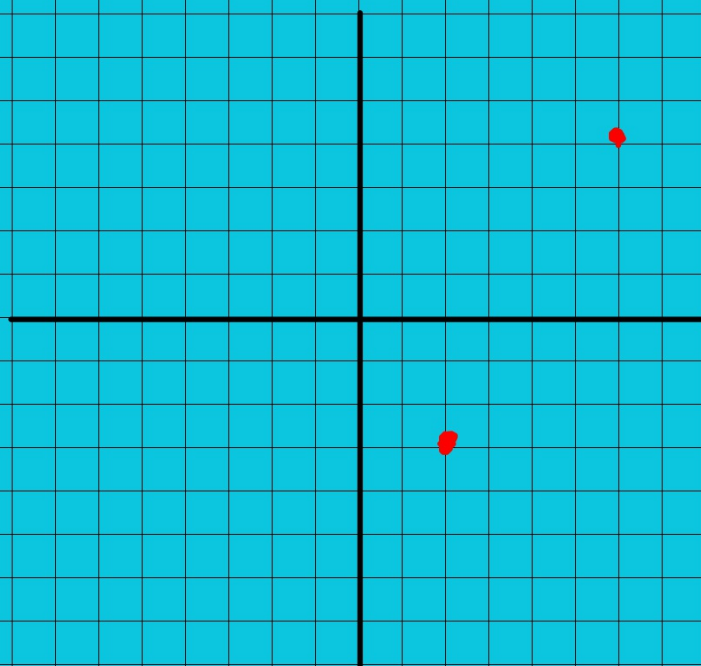
Using the slope formula
find the slope of the
line containing the points
(2, -3) and (6, 4).

x_1, y_1 x_2, y_2

$$m = \frac{4 - (-3)}{6 - 2} = \frac{7}{4}$$

$$m = \frac{4 - -3}{6 - 2}$$

Now graph your points



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What do you notice about the slope from the formula and the line that you graphed?

When using a graph, you can use the _____ to help you find the slope of the line as well.

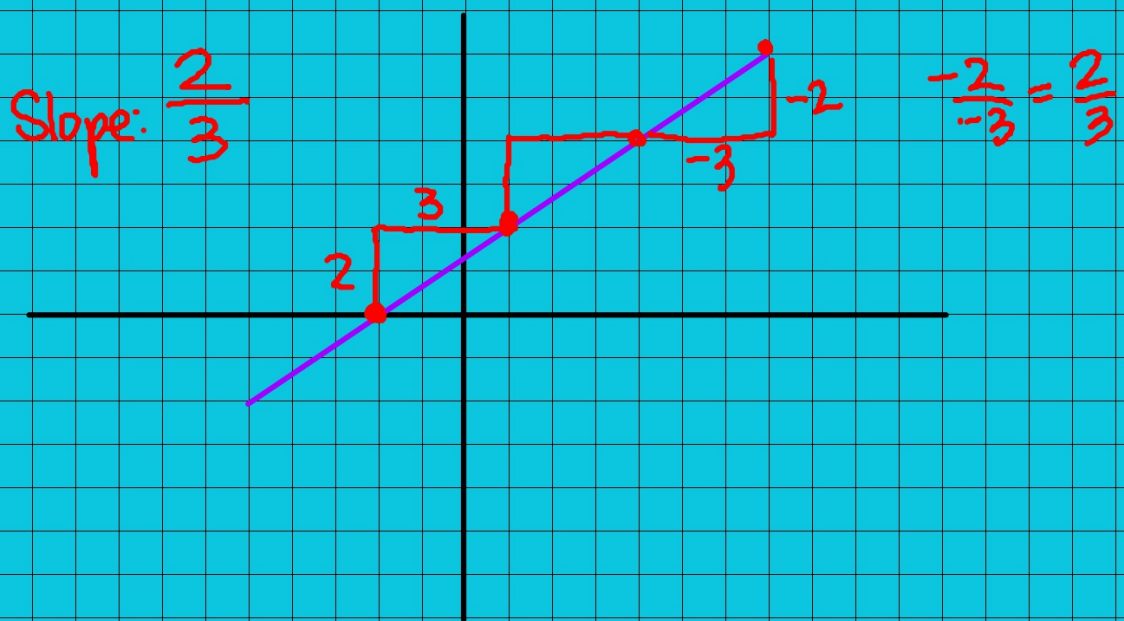
Slope triangle

You can use the _____ to help find the slope of a given line or you can use it to help you create the line from given information.

Slope triangle

Objective: SWBAT find the slope of a line on a graph using a slope triangle or the slope formula and be able to explain the process they used.

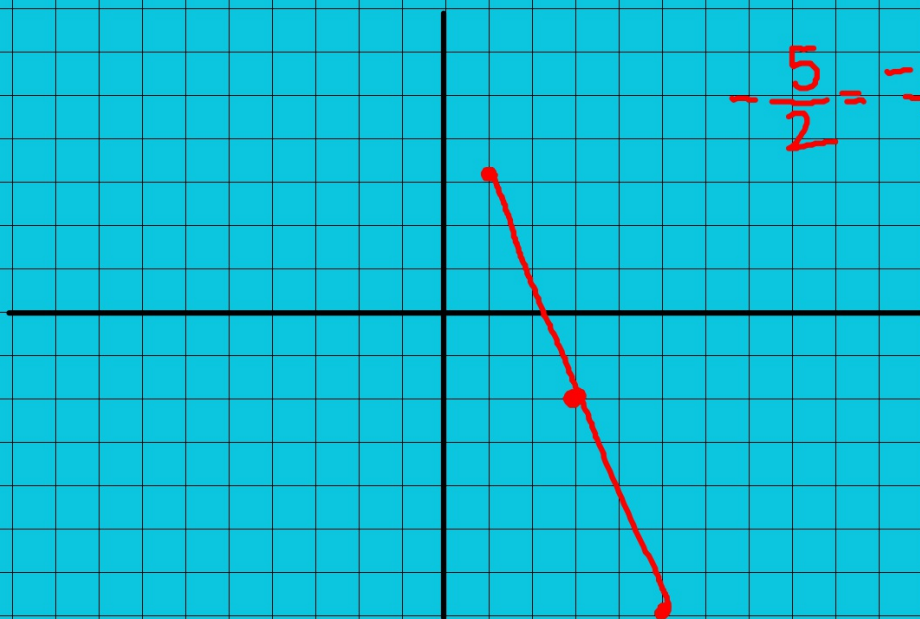
Given the line find the slope of the line.



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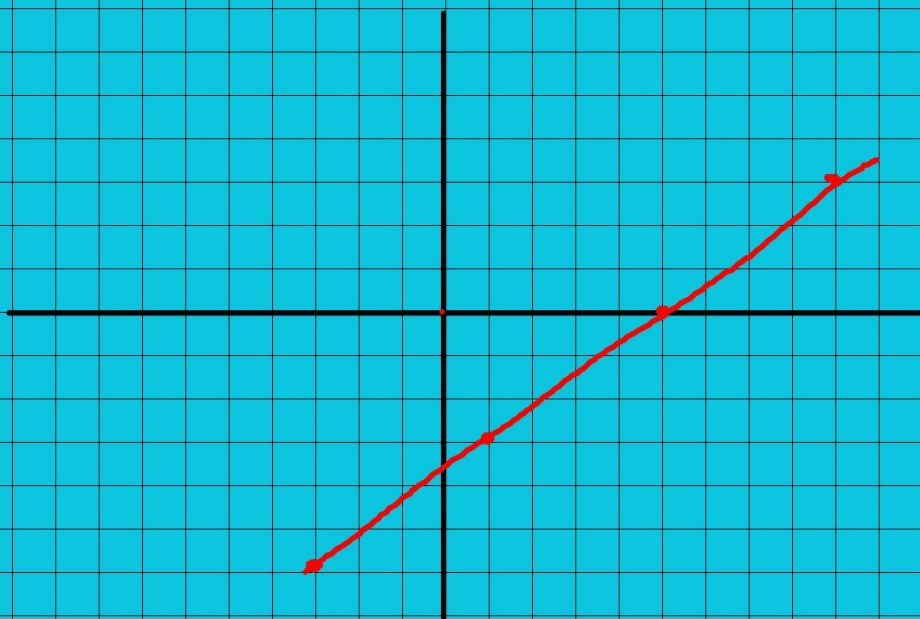
Given the point (3, -2) and the slope $-\frac{5}{2}$ graph the line

$$-\frac{5}{2} = -\frac{5}{2} = \frac{5}{-2}$$



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Given the point $(-3, -6)$ and the slope of $\frac{3}{4}$ draw the line.



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Identify two points on the line and find the slope using a slope triangle

