

Objective: Students will calculate the slope of a line containing two points and use their knowledge of slope to explain the meaning of the slope in the context of various situations.

## Warm - Up

1. Solve the following equation for the given variable.

$$\begin{array}{l}
 -7(4) = 1 - 2(4) - 8 \\
 -28 = 1 - 8 - 8 \\
 -15 = -7 - 8 \\
 -15 = -15 \checkmark
 \end{array}
 \quad
 \begin{array}{l}
 13 - 7n = 1 - 2n - 8 \\
 + 8 \quad + 8 \\
 21 - 7n = 1 - 2n \\
 - \frac{1}{1} \\
 20 - 7n = -2n \\
 + 7n \quad + 7n \\
 20 = 5n \\
 \frac{20}{5} = \frac{5n}{5} \\
 4 = n
 \end{array}$$

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Think-Pair-Share:

What is slope in a non-math context way?

*incline of a hill, ski slopes*

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

*treadmills, "Slippery slope", roads*

What is slope in a math context way?

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

*rate of change*

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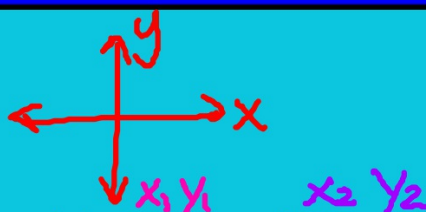
<http://www.youtube.com/watch?v=4JuAyiS9JqM>

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?

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



Find the slope of the line containing the points (4, 6) and (10, 14).

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

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{14 - 6}{10 - 4} = \frac{8}{6}$$

3. Simplify and leave in fraction form.

$$\frac{8}{6} = \frac{4}{3}$$

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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: Students will 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 and why they used it.

Warm Up

What is the formula for finding slope?

$$m = \frac{y^2 - y^1}{x^2 - x^1}$$

What is the slope of the line with points  $(x_1, y_1)$  and  $(x_2, y_2)$ ?

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

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

**Objective: Students will 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 and why they used it.**

**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.**



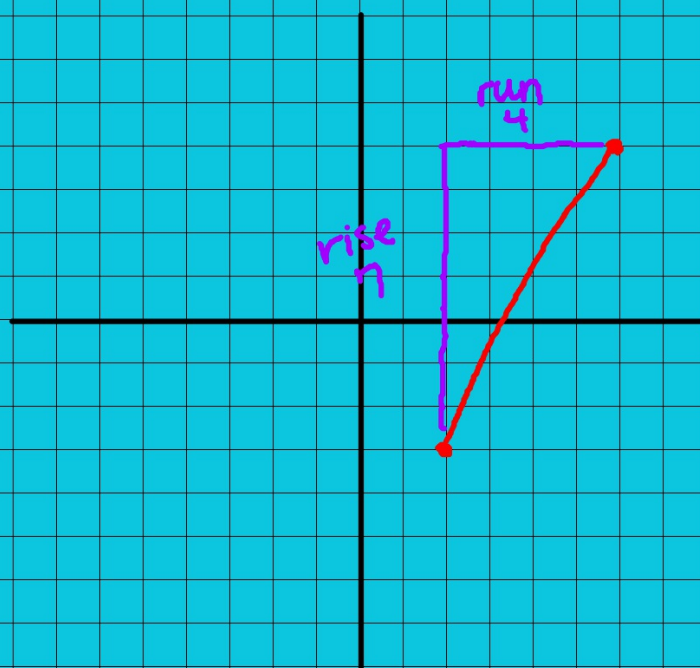
Objective: Students will find the slope of a line on a graph using a slope triangle or the slope formula and be able to explain the process they used and why they used it.

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

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

rise  
run

Now graph your points



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.

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

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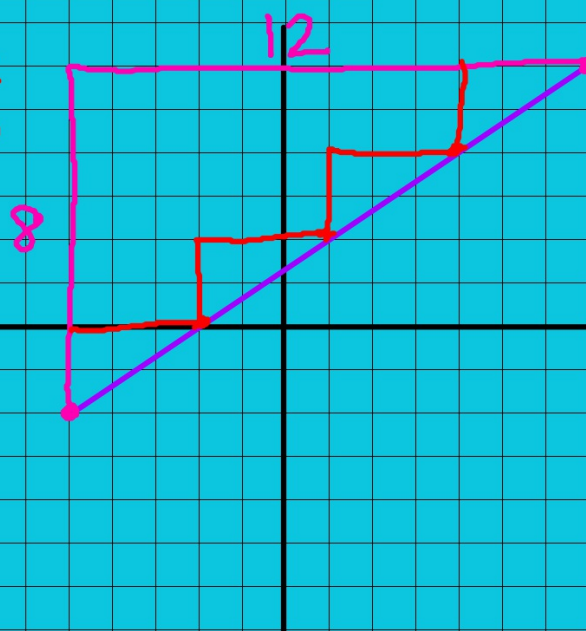
When using a graph, you can use the Slope triangle to help you find the slope of the line as well.

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

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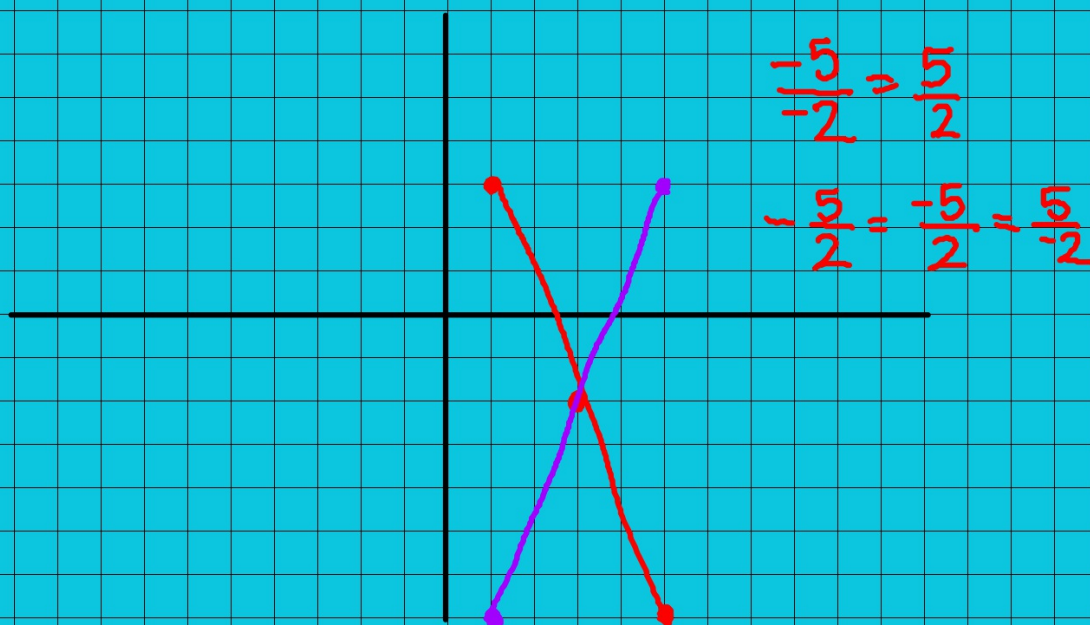
Given the line find the slope of the line.

$$m = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$
$$m = \frac{2}{3}$$



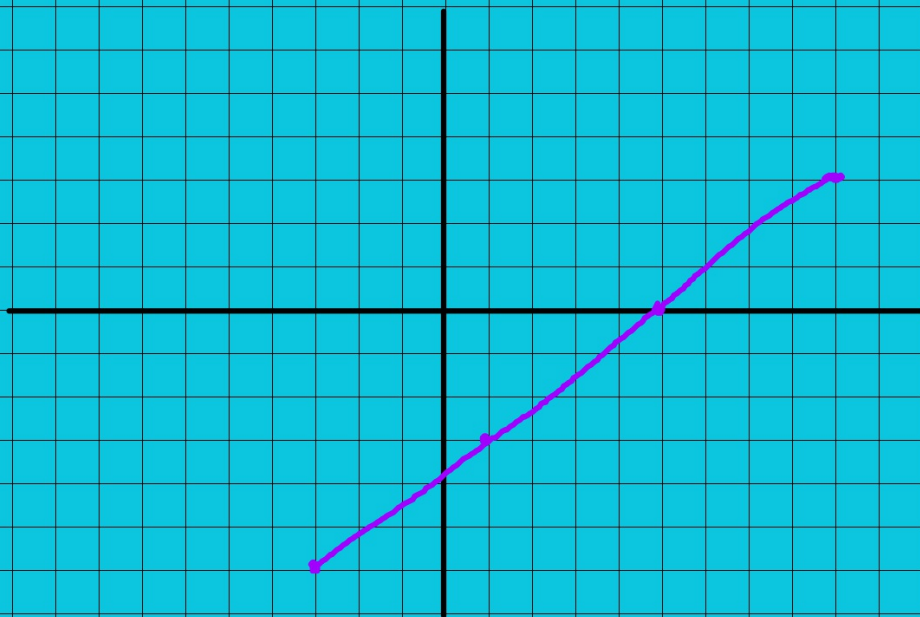
Objective: Students will find the slope of a line on a graph using a slope triangle or the slope formula and be able to explain the process they used and why they used it.

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



Objective: Students will 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 and why they used it.

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

