

# LESSON Digits 10-3

## slope triangles

3/26/2019

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**Goal:** I will be able to understand the relationship between slope and similar triangles.

**Tool Bag**  
Formulas, equations, Vocabulary, etc.

**Here's How... Notes & Examples**

**Example**  
Draw the triangle that is the image of the given triangle after a dilation with a center of  $(0, -2)$  and a scale factor of 2. Look at the ratio of the rise to the run of each triangle. How do the ratios compare?

$\Delta 1 = \frac{\text{rise}}{\text{run}} = \frac{3}{2}$   
 $\Delta 2 = \frac{\text{rise}}{\text{run}} = \frac{6}{4} = \frac{3}{2}$

The triangles have the same slope.

Looking at the triangles from the line, they are called the "slope triangles" of the line  $y = \frac{3}{2}x - 2$ .

$y = mx + b$      $m = \frac{3}{2}$

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**You Try**

Draw the following triangle with a scale factor of  $\frac{1}{2}$ . What is the ratio of the rise to run for the two triangles?

$\Delta 1 \quad \frac{\text{rise}}{\text{run}} = \frac{2}{4} = \frac{1}{2}$   
 $\Delta 2 \quad \frac{\text{rise}}{\text{run}} = \frac{1}{2}$   
 Same slope

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**Example 2**

Which slope triangles could you use to find the slope of the line with equation  $y = \frac{2}{3}x - 4$ .

i.  $\frac{\text{rise}}{\text{run}} = \frac{3}{2}$

ii.  $\frac{\text{rise}}{\text{run}} = \frac{2}{3}$

iii.  $\frac{\text{rise}}{\text{run}} = \frac{4}{6} = \frac{2}{3}$