Examples
The Slope of a Line

Based on power point presentations by Pearson Education, Inc.
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Learning Objectives

1. Define and find the slope of a line.
2. Define the slope-intercept form of a linear equation in two variables.

Example 1: Calculate the Slope of a Line

Find the slope of the line passing through the points determined by the ordered pairs (− 1, 3) and (− 4, − 6).

We will let (− 1, 3) equal (x_1, y_1) and (− 4, − 6) equal (x_2, y_2). However, you can also let (− 4, − 6) equal (x_1, y_1) and (− 1, 3) equal (x_2, y_2). In either case, you will get the same answer.

Let's say that (− 4, − 6) equals (x_1, y_1) and (− 1, 3) equals (x_2, y_2). Be sure not to get confused!

Then $$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3-(-6)}{-1-(-4)} = \frac{3+6}{-1+4} = \frac{9}{3} = 3$$

Example 2: Calculate the Slope of a Line

Find the slope of the line passing through the points determined by the ordered pairs(6, 3) and (6, 4).

Let's say that (6, 3) is (x_1, y_1) and (6, 4) is (x_2, y_2). Be sure not to get confused!

Then $$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4-3}{6-6} = \frac{1}{0}$$

Since there is a 0 in the denominator, this particular slope is undefined.

Example 3: Calculate the Slope of a Line

Find the slope of the line passing through the points determined by the ordered pairs (1, 5) and (− 9, 5).

Let's say that (1, 5) is (x_1, y_1) and (− 9, 5) is (x_2, y_2). Be sure not to get confused! Then

$$m = \frac{y_2 - y_1}{x_2 - y_{x1}} = \frac{5-5}{-9-1} = \frac{0}{-10} = 0$$

Since there is a 0 in the numerator, this particular slope equals 0. Please note the difference between Example 3 and Example 4!