College Algebra 1

5.1 Rate of Change and Slope

Objectives: Students will be able to (a) find rates of change from tables and (b) find slope.

**Starter:**

You can use ratios to show a relationship between changing quantities, for example vertical and horizontal change.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shows the relationship between two changing quantities.

 When one quantity depends on the other, the following is true:

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Finding Rate of Change Using a Table:



You Try:



\_\_\_\_\_\_\_\_ is the ratio of the vertical change (or rise) to the horizontal change (or run) between two points on the line.

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 \*\*Moving up or to the right are positive movements

 \*\*Moving down or the left are negative movements

Finding the Slope Using a graph:



You try:



You can also use any two points on a line to find its slope.

Two find slope given two points:



Finding Slope Using Points:



You Try:



Finding Slopes of Horizontal and Vertical Lines:



You Try:



5.2 Direct Variation
Objective: Students will be able to write and graph an equation of a direct variation.

\*\*If the ratio of two variables is constant, then the variables have a special relationship. This relationship is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A direct variation is a relationship that can be represented by a function the form y = kx, where k is not equal to 0. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ k is the coefficient of x. By dividing each side of y = kx by x, you can see that the ratio of the variables is constant:

To determine if an equation is a direct variation solve for y!! If y = kx and k is not equal to 0 it represents a direct variation.

Identifying a Direct Variation:



You try:



Writing a Direct Variation Equation:



You Try:



Application and Graph:



Concept Summary: Graphs of Direct Variation:



Writing a Direct Variation from a Table:



You Try:



Hw: Section 5.2 p. 304 #9-29 odd, 30-32, 37-43 odd