Standard Math 1 4.1 Using Graphs to Relate to Two Quantities Unit 1 Day 1

**Example 1:** The following graph shows the distance traveled by a school bus based on every morning from 6:30-7am.

1. What do the flat sections of the graph represent?
2. What do the steep sections of the graph represent?
3. Which is the best estimate of the busses average speed: 17mph, 20mph, 34mph, 50mph?
4. Why doesn’t the path of the line ever go down?

Often you will need to recognize graphs plotting distance versus time, or distance from a point versus time, usually with the time plotted on the x-axis.

Distance is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of time.

**Example 2:** Match each graph below with the appropriate situation.

1. Mary leaves the house, walks to the store, and returns with groceries.
2. Roger walks around the block.
3. Sylvia runs to the track, takes a few laps, and then runs home.



**Example 3:** Use the graph to the right to answer each of the following.

1. When is Dan driving on the highway?
2. Approximate Dan’s average speed for the trip to work.
3. Approximate Dan’s top speed on his way to work.
4.

**Example 4:** Use the graph below to answer each of the following.

1. Who finishes the marathon first?
2. How do Megan and Carl’s strategies compare?
3. Approximately how many minutes does it take Carl to run each mile during the first 1:40 of the race? (4, 5, 6, or 7 minutes?)

Standard Math 1 4.6 Relations and Functions Unit 1 Day 1

**Relation:** A set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It can be written as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Domain:** The set of \_\_\_\_\_\_\_ values in an ordered pair. **Range:** The set of \_\_\_\_\_\_\_ values in an ordered pair.

**Example 1:** List the domain and range for each relation.

1. (4, 0) (2, 8) (6, -1) (10, 4)



**Function:** A relation in which every x value has only one y value. The X’s can’t \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!!!!!



**Example 2:** Are the following functions?

1. (2, 4) (3, 5) (5, 10) (2, 7)
2. (1, 1) (2, 2) (3, 3) (4, 4) (5, 5)
3.

**Vertical Line Test:** A way to test if a graph is a function or not.

**Example 3:** State if the graph is a function by using the vertical line test.



1.
2.
3.

**Function Notation:** To write a rule in function notation, you use the symbol \_\_\_\_\_\_\_\_ instead of \_\_\_\_\_. It is read “F of X”

**Example 4:** Evaluate each of the following.

1. y = 3x + 4 if x = 4
2. f(x) = 3x + 4 if f(6)
3. f(x) = -12x + 1 if f(3)