NAME _____ DATE_____ PERIOD _____

3 Anticipation Guide

Graphing Relations and Functions

Step 1 ***Before you begin Chapter 3***

- Read each statement.
- Decide whether you Agree (A) or Disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (Not Sure).

STEP 1 A, D, or NS	Statement	STEP 2 A or D
	1. The ordered pair $(-2, -5)$ would be graphed in Quadrant IV of the coordinate plane.	
	2. The inverse of a relation is found by switching the coordinates of each ordered pair.	
	3. The set of ordered pairs $\{(2, 5), (3, 6), (2, -5), (4, 7)\}$ represents a function.	
	4. If a vertical line intersects a graph in more than one point then the graph does not represent a function.	
	5. $12 - 3d = 4d + 6$ is an example of an equation written in two variables.	
	6. In the equation $y = 65x$, y is the independent variable.	
	7. The equation $6x + 2xy = 5$ is a linear equation because each variable is to the first power.	
	8. A sequence is arithmetic if the difference between all consecutive terms is the same.	
	9. Each number in a sequence is called a factor of that sequence.	
	10. Making a conclusion based on a pattern of examples is called inductive reasoning.	

Step 2 ***After you complete Chapter 3***

- Reread each statement and complete the last column by entering an A or a D.
- Did any of your opinions about the statements change from the first column?
- For those statements that you mark with a D, use a piece of paper to write an example of why you disagree.

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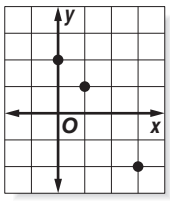
3-1 Study Guide and Intervention

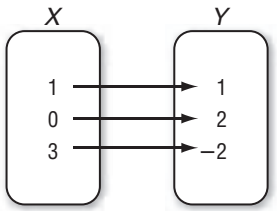
Representing Relations

Represent Relations A **relation** is a set of ordered pairs. A relation can be represented by a set of ordered pairs, a table, a graph, or a **mapping**. A mapping illustrates how each element of the domain is paired with an element in the range.

Example 1 **Express the relation {(1, 1), (0, 2), (3, −2)} as a table, a graph, and a mapping. State the domain and range of the relation.**

x	y
1	1
0	2
3	−2





The domain for this relation is {0, 1, 3}.
The range for this relation is {−2, 1, 2}.

Example 2 **A person playing racquetball uses 4 calories per hour for every pound he or she weighs.**

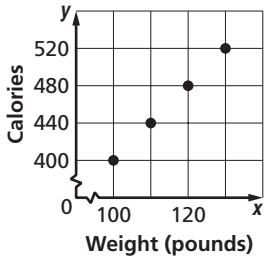
a. Make a table to show the relation between weight and calories burned in one hour for people weighing 100, 110, 120, and 130 pounds.
Source: *The Math Teacher's Book of Lists*

x	y
100	400
110	440
120	480
130	520

b. Give the domain and range.

domain: {100, 110, 120, 130}
range: {400, 440, 480, 520}

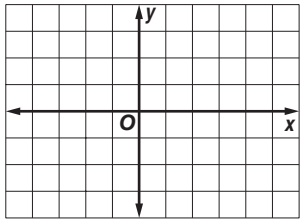
c. Graph the relation.



Exercises

1. Express the relation {(−2, −1), (3, 3), (4, 3)} as a table, a graph, and a mapping. Then determine the domain and range.

x	y



2. The temperature in a house drops 2° for every hour the air conditioner is on between the hours of 6 A.M. and 11 A.M. Make a graph to show the relationship between time and temperature if the temperature at 6 A.M. was 82°F.