

Unit 1 Function Relationships
Day 3 Domain and Range (PH 5-1 and 5-2)

Name _____
 Date _____ Hour _____

VOCABULARY:

A _____ is a set ordered pairs (x, y) , a table or a graph.

The _____ is all of the inputs (x -values) for a function.

The _____ is all of the outputs (y -values) for a function.

A _____ is a relation where each input x has exactly one output y .

The vending machine below has the first two rows filled with Doritos, Chips, and Pretzels. The last row is filled with Snickers, M & M's, and Starburst.

A1 Doritos		A2 Chips		Make your selection by entering the letter and number of your choice on the keypad below then push "Enter"
B1 Pretzels		B2 Pretzels		
C1 Snickers	C2 M & M's	C3 Starburst	C4 Snickers	

A	B	C
1		2
3		4
Enter		



Complete the following input/output table:

Input (Buttons pushed)	Output (Snack received)
A1	Doritos
A2	Chips
B1	
B2	
C1	
C2	
C3	
C4	

1. Will an input ever have more than one output? Explain.
2. Will an output ever have more than one input? Explain.
3. What variable in math represents inputs?
4. What variable in math represents outputs?
5. Is the relation defined by the snack machine an example of a function? Explain why or why not.

Give the domain and range of each relation. Then decide if each is a function or not a function:

6. $\{(1, 2), (3, 4), (5, 6)\}$

7. $\{(1, 2), (1, 3), (1, 4)\}$

Function Notation is a way to write a function using **x** to represent the inputs and **f(x)** to represent the outputs. The coordinates for this relation are (x, f(x)). For example, $f(1) = 8$ means the input is 1 and the output is 8. This can also be written as the coordinate (1, 8).

8. a. Evaluate $f(x) = -5x + 25$ for an input $x = -2$.

b. Evaluate $f(x) = 4x^2 + 2$ for an input $x = 3$.

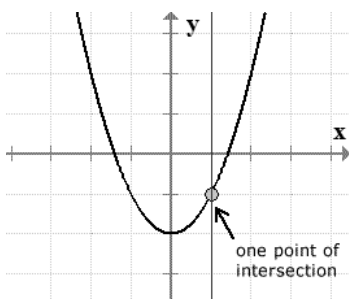
9. Find the range of the function for the domain $\{-2, 0, 5\}$.

a. $f(x) = -x + 2$

b. $g(t) = t^2 + 1$

The _____ is used to determine whether a relation is a function.

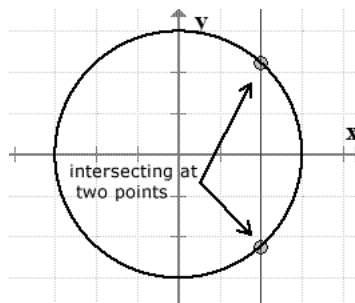
10. Use the vertical line test to determine whether the relations graphed below are functions. State the domain and range of each.



Function:

Domain:

Range:



Function:

Domain:

Range:

Homework: Page 244 – 245 #1– 10 all, 15 – 24 all, 38 – 40 all