Name: _____ Date: _____ **Unit 3 Class Work**

Why Are Functions Important to Learn About?!

Thoughts/Questions About Functions

Short-Term Goals/Objectives:

Relations and Functions Class Work

Objective: Today you will be able to identify whether or not relations are functions, and explain why.

**Think about a vending machine…*

- How does the vending machine function?

- What would you consider an "input?"

- Is each input unique? Explain.

- What would you consider an "output?"

- What situation(s) may signal that the machine is NOT functioning correctly?

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Relations and Functions Class Work

Objective: You will be able to identify whether or not relations are functions, support your identification, and state the domain and range of relations.

In the world of Algebra, there are a few vocabulary terms you must understand in order to grasp mathematical functions!

***Definitions*:**

- **Relation:**
  - **Domain:**
  - **Range:**
    - **FUNCTION:**

Guided Examples: Day 1: Determine whether or not each relation is a function.
Day 2: Identify the domain and range of each relation.

A. SET OF POINTS

Consider the relation: {(-2,3), (1,8), (0,-7), (4,3)}

Method 1: Mapping Diagram

Method 2: Vertical Line Test (VLT)

Function: yes / no

Justification(s):

Domain:

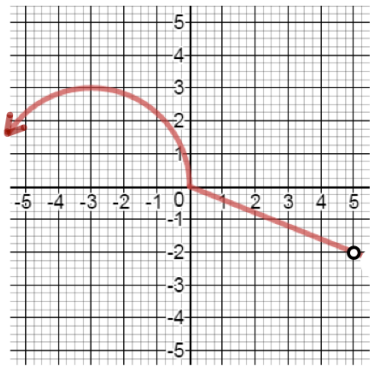
Range:

B. EQUATION **Is the equation $\sqrt{x} + 1 = y$ a function?**

What is the domain of the relation? **What is the range of the relation?**

C. GRAPH

***Function*:** yes / no ***Justification*:**



***Domain*:**

***Range*:**

Now You Try Some!

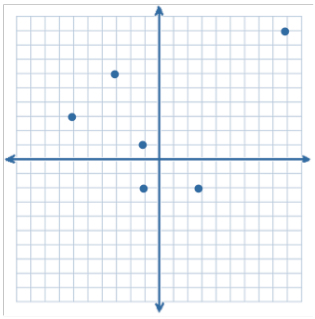
Name: _____ Date: _____ **Unit 3 Class Work**

Day 1: Determine whether or not each relation is a function.

Support your answer! ☺

Day 2: Identify the domain and range of each relation, using ALL appropriate notations.

1.



Function: yes / no ***Justification***:

Domain:

Range:

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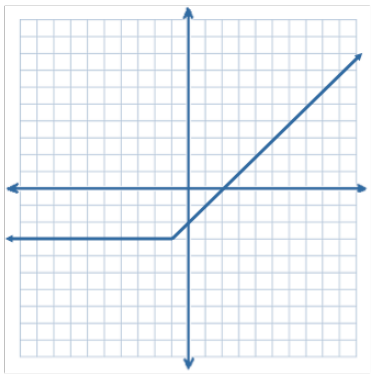
2. $x = y^2$

Function: yes / no ***Justification***:

Domain:

Range:

3.



Function: yes / no ***Justification***:

Domain:

Range:

4. {(0,2), (3,2), (-7,1), (9,1), (3,8)}

Function: yes / no ***Justification***:

Domain:

Range:

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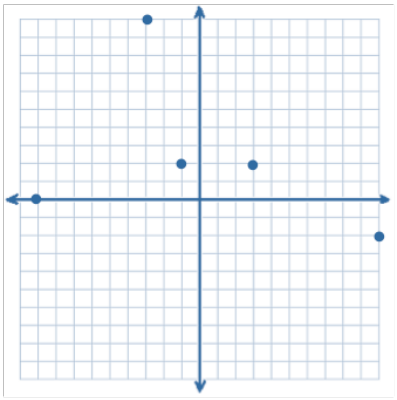
5. $y = |2x + 8|$

Function: yes / no ***Justification***:

Domain:

Range:

---

6. 

Function: yes / no ***Justification***:

Domain:

Range:

7. 

Function: yes / no ***Justification***:

Name: _____ Date: _____ **Unit 3 Class Work**

***Domain*:** ***Range*:**

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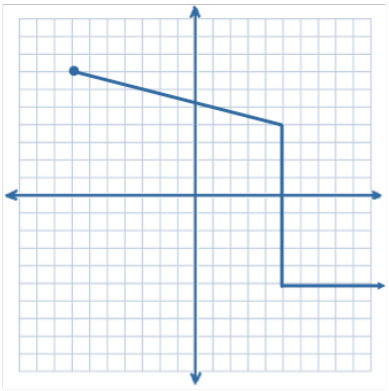
8. 

***Function*:** yes / no ***Justification*:**

***Domain*:** ***Range*:**

9. Consider the input output table below.

Input	-15	23	0	12	-3	
Output	3	0	8	2	3	9

a. Choose any value to place in the empty cell so that the table of values satisfies the definition of a function. Explain your choice.

b. Choose any value to place in the empty cell so that the table of values does not satisfy the definition of a function. Explain your choice.

10. Choose all values that can be placed in the empty cell so that the table of values satisfies the definition of a function.

Input	9	13	28	-12	-2	
Output	0	4	-8	4	-3	0

☐ -3 ☐ -13 ☐ 4

☐ 0 ☐ 9 ☐ 28

HOMEWORK Day 1: p. 59-60 #12-21, #40-45, 62, and 63

Day 2: p.59-60 #12, 17, 18, 19, 21 (just state the domain and range of each relation) and #36-39, & 58

Day 1:

Complete A is your favorite season is Summer or Winter.

Complete B if your favorite season is Spring or Fall.

A. Create any relation that IS a function. Explain your decision.

B. Create any relation that is NOT a function. Explain your decision.

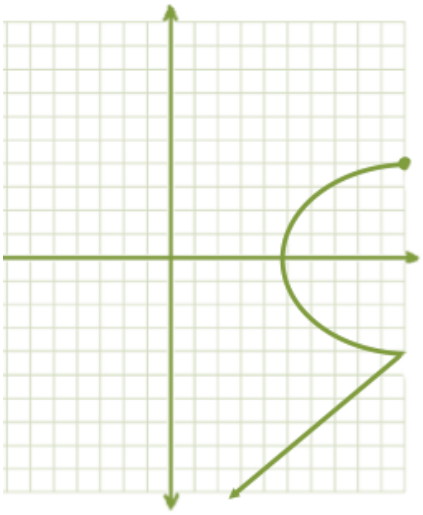
Write/Draw your function on the front of your post-it note,
& the answer on the back. ☺

Day 2:

Name: _____ Date: _____ **Unit 3 Class Work**

1. Determine whether or not each relation is a function. Then state the domain and range of each.

A. {(-2,4), (-1,3), (0,4)}

B. 

2. Write any questions you still have regarding functions, domain, and/or range. If you do not have any questions, create a problem that could be solved using any of these ideas. ☺