

Name: _____

Date: _____

Notes

Algebra Section 1.6

Pages

Goal: "I will be able to write a function as a rule and as a table"
"I will identify the domain and range of a function"



Vocabulary:

Function: _____

Domain: _____

Range: _____

Dependent Variable: _____

Independent Variable: _____

Example:

The input-output table shows the cost of various amounts of regular unleaded gas from the same pump. Identify the domain and range of the function.

| | | | | |
|-------------------------|-------|-------|-------|-------|
| Input (gallons) | 10 | 12 | 13 | 17 |
| Output (dollars) | 19.99 | 23.99 | 25.99 | 33.98 |

Domain (Input): 10,12,13,17

Range (Output): 19.99, 23.99, 25.99, 33.98

Try These:

a) Identify the domain and range of the given function:

| | | | | |
|--------|---|----|----|----|
| Input | 1 | 3 | 4 | 8 |
| Output | 5 | 11 | 14 | 26 |

Domain: _____

Range: _____

b) Identify the domain and range of the given function:

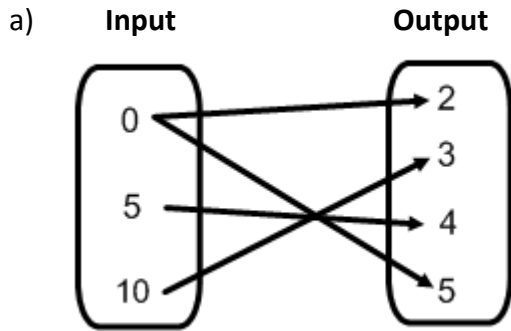
| | | | | |
|--------|---|---|---|---|
| Input | 0 | 1 | 2 | 4 |
| Output | 5 | 2 | 2 | 1 |

Domain: _____

Range: _____

**Why is it a function even though 2 appears twice in the output? _____

Decide if the following relationships represent a function. Explain why or why not. If yes, identify the domain and range.



b)

| Input | Output |
|-------|--------|
| 0 | 0 |
| 1 | 2 |
| 4 | 8 |
| 6 | 12 |

c)

| Input | 3 | 6 | 9 | 12 |
|--------|---|---|---|----|
| Output | 1 | 2 | 2 | 1 |

d)

| Input | 2 | 2 | 4 | 7 |
|--------|---|---|---|---|
| Output | 0 | 1 | 2 | 3 |

Ways to Represent Functions

Example:

Verbal Rule

The output is 3 more than the input.

Equation

$$y = 3 + x$$

Table

| | | | | |
|------------|---|---|---|---|
| Input (x) | 0 | 1 | 2 | 3 |
| Output (y) | 3 | 4 | 5 | 6 |

Plug in the values

Try These:

a) The domain of the function $y = 2x$ is 0, 2, 5, 7, 8. Make a table for the function. Then identify the range.

| | | | | | |
|---------------|--|--|--|--|--|
| Input | | | | | |
| Output | | | | | |

Range: _____

b) Make a table for the function $y = x - 5$ with a domain of 10, 12, 15, 18, 29. Then identify the range.

| | | | | | |
|---------------|--|--|--|--|--|
| Input | | | | | |
| Output | | | | | |

Range: _____

Writing a Rule for a Function:

Basic Premise: If you have x , how do you get y ?

a)

| | | | | | |
|---------------|---|---|---|---|----|
| Input | 0 | 1 | 4 | 6 | 10 |
| Output | 2 | 3 | 6 | 8 | 12 |

Rule: _____

b)

| | | | | | |
|---------------|---|---|---|---|---|
| Input | 1 | 2 | 4 | 7 | 9 |
| Output | 0 | 1 | 3 | 6 | 8 |

Rule _____

c)

| | | | | | |
|---------------|---|---|---|----|----|
| Input | 1 | 3 | 5 | 7 | 9 |
| Output | 1 | 5 | 9 | 13 | 17 |

Rule: _____

Write a rule for the following functions.

a)

| | | | | | |
|---------------|---|----|----|----|----|
| Input | 0 | 3 | 6 | 9 | 12 |
| Output | 5 | 14 | 23 | 32 | 41 |

Rule: _____

b)

| | | | | | |
|---------------|---|---|----|----|----|
| Input | 4 | 6 | 10 | 16 | 26 |
| Output | 4 | 5 | 7 | 10 | 15 |

Rule _____

c) You are buying concert tickets that cost \$15 each. You can buy up to six tickets.

a) Write a rule for the amount you spend (in dollars) (A) as a function of the number of tickets you buy (t).

b) Make a table to identify the range.

| | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|
| Number of Tickets n | | | | | | | |
| Amount (dollars) A | | | | | | | |

c) Identify the independent and dependent variables.

d) Identify the domain and range.

d) At a community center, art lessons are offered at night. The fee is \$12 per lesson. You plan to attend up to 5 lessons.

- a) Write a rule for the amount you spend (in dollars) as a function of the number of lessons you attend.
- b) Identify the independent and dependent variables.
- c) Identify the domain and range.