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1.6 - Functions as Rules and Tables
"I WILL …
Identify a function with rules and tables."

I. Definitions

A. Relation is a pairing of 2 items (like (x, y))

B. Domain is the __-values in a relation. Also known as _____ Variable

C. Range is the __-values in a relation. Also known as _____ Variable

D. "__ depends on __"

E. Function is a relation that for each domain element, there is only 1 range element.

____ do not repeat.

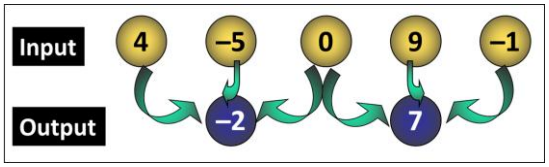
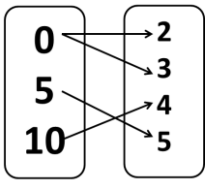
F. Think of a _____ needs his or her _____ to _____ _____.

II. Making a Table

A. Establish the CONSTANT difference between the x and the y-coordinates

B. Plug in of what is given to us

III. Model Problems

Ex 1: The cost of a tank of gas depends on the number of gallons purchased. What is the input and output?	Your Turn: The volume of a cube depends on the length of its edges. What is the input and output?
Ex 2: Identify the domain and range of this function, {(0, –5), (1, –4), (2, –3), (3, –2), (4, –1), (5, 0)}	Ex 3: Identify the domain and range of this function, 
Your Turn: Identify the domain and range of this function, 	Ex 4: Is this relation, a function? {(0, –5), (1, –4), (2, –3), (3, –2), (4, –1), (5, 0)}

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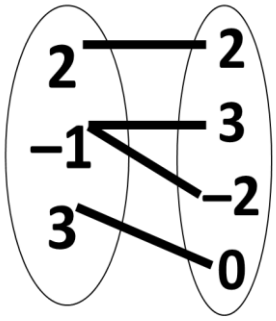
Ex 4: Is this relation, a function? {(–1, –7), (1, 0), (2, –3), (0, –8), (0, 5), (–2, –1)}

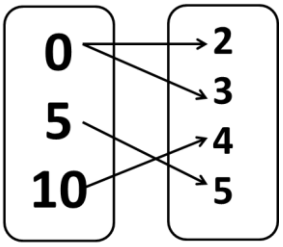
Ex 5: Is this mapping a function?

Input	Output
0	0
1	2
4	8
6	12

Ex 6: Is this mapping a function?



Your Turn: Is this mapping a function?



Ex 7: The domain of the function, $y = 2x$ is 0, 2, 5, 7, and 8. Make a table and identify the range of the function.

Ex 8: The range of the function, $y = x + 4$ is 4, 6, 7, 10, and 11. Make a table and identify the domain of the function.

Ex 9: Write the rule of this function:

x	*y*
0	2
1	3
4	6
6	8
10	12

Your Turn: Write the rule of this function:

x	*y*
1	0
2	1
4	3
7	6
9	8

Assignment: Pg 38: 4-20 even

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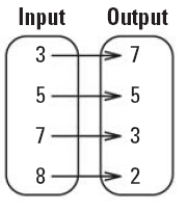
Assignment: Pg 38: 4-20 even

DOMAIN AND RANGE **Identify the domain and range of the function.**

3.

Input	Output
0	5
1	7
2	15
3	44

4.



5.

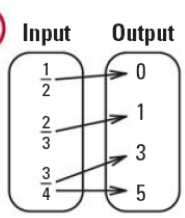
Input	Output
6	5
12	7
21	10
42	17

IDENTIFYING FUNCTIONS **Tell whether the pairing is a function.**

6.

Input	Output
0	7.5
1	9.5
2	11.5
3	13.5

7.



8.

Input	Output
7	13
11	8
21	13
35	20

ERROR ANALYSIS **In Exercises 9 and 10, describe and correct the error(s) related to the function represented by the table.**

Input, x	1	2	3	4	5
Output, y	6	7	8	6	9

9. The pairing is not a function. One output is paired with two inputs. ✗

10. The pairing is a function. The range is 1, 2, 3, 4, and 5. ✗

11. **TAKS REASONING** Draw a mapping diagram for a function with 6 inputs. Then make a table to represent the function.

12. **TAKS REASONING** The domain of the function $y = 5x - 1$ is 1, 3, 4, 5, and 6. Which number is in the range of the function?

(A) 0 (B) 4 (C) 9 (D) 15

13. **TAKS REASONING** Each output of a function is 0.5 less than the corresponding input. Which equation is a rule for the function?

(A) $y = x - 0.5$ (B) $y = x + 0.5$ (C) $y = 0.5 - x$ (D) $y = 0.5x$

TABLES **Make a table for the function. Identify the range of the function.**

14. $y = x - 3$
Domain: 12, 15, 22, 30

15. $y = x + 3.5$
Domain: 4, 5, 7, 8, 12

16. $y = 3x + 4$
Domain: 0, 5, 7, 10

17. $y = \frac{1}{2}x + 3$
Domain: 4, 6, 9, 11

18. $y = \frac{2}{3}x + \frac{1}{3}$
Domain: 4, 6, 8, 12

19. $y = \frac{0.5x + 1}{2}$
Domain: 0, 2, 4, 6

FUNCTION RULES **Write a rule for the function.**

20.

Input, x	0	1	2	3
Output, y	2.2	3.2	4.2	5.2

21.

Input, x	15	20	21	30
Output, y	7	12	13	22