Secondary 2
lesson 6.1

Functions Notation
And
Operations with Functions

Objective:

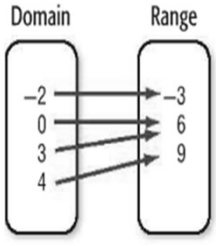
By the end of the lesson you will be able to:
Identify and understand FUNCTION notation.
Add, Subtract, Multiply, and Divide Functions.

2

A FUNCTION is where each element of the DOMAIN is paired with *exactly* one element of the RANGE.

Determine whether these relations are functions.

a.



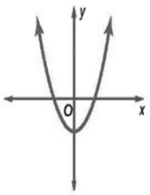
b.

Domain	1	3	5	1
Range	4	2	4	−4

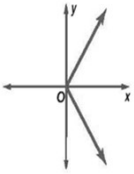
3

You can use the vertical line test to see if a graph represents a function. If a vertical line intersects the graph more than once, then the graph is not a function. Otherwise, the relation is a function.

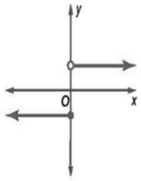
Function



Not a Function



Function

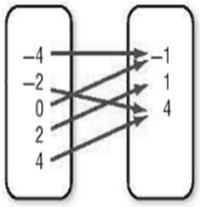


4

Practice:

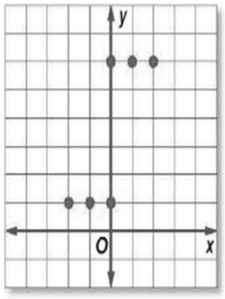
Determine whether these relations are functions. Explain.

1. Domain Range



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

5.



5

Equations that are functions can be written in a form called function notation.

Equation

$y = 3x - 8$

Function Notation

$f(x) = 3x - 8$

$* f(x)\ is\ pronounced\ \ f\ \ of\ \ x.$

This is NOT multiplication. It is just notation.

6

Rewrite the following using function notation.

1) $y = 3x + 4$

2) $4x - 7 = y$

3) $y = \frac{3x}{2} + 6$

4) $3x + 4y = 12$

7

Combine the following functions – This means to add, subtract, multiply or divide just like you do with polynomials.

$\boldsymbol{If\ f(x) = -x^2 + 7\ and\ g(x) = 2x^2 - 4}$:

5) Find g(x)+ f(x)

6) Find (f - g)(x)

Evaluate the following functions – This means replace all the x's with the given value:

$\boldsymbol{If\ f(x) = 6x + 7\ and\ g(x) = x^2 - 4}$:

7) Find f(-3)

8) Find g(4)

8

Note: When you divide you can't have zero in the denominator – it's undefined. If you are trying to decide what the Domain is you need to exclude any value that makes the denominator zero. This is something you need to watch whenever you have a fraction.

Example) What is the Domain for: $\frac{4x}{x-5}$?

9