Trigonometry

Section P-5 (Part 2): Functions

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**:

* Students will be able to write relationships between variables using function notation.
* Students will be able to determine whether an equation is a function.
* Students will be able to evaluate functions for a given number or expression.
* Students will be able to evaluate piecewise functions for a given number.

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| **Main Idea** | **Notes** |
| **Vocabulary:** | Representation:It is common to represent functions as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in discrete mathematics.In ALGEBRA, it is more common to represent them as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Example:y = x²This represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as a function of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.The values that make up the set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_values, ***x***, are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The values that make up the set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ values, ***y***, are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  |
| **Example 1:****Testing for Functions Represented by Equations****Vocabulary:****Example 2: Determine Whether Each Relation is a Function****Example 3: Evaluating a Function****Example 4:** **Evaluating a Function****Example 5:** **Evaluating a Function****Example 6:** **Evaluating a Function****Example 7:** **Evaluating a Function****Vocabulary:****Example 8: Evaluating a Piecewise Function****Homework:** | Do the following equations represent y as a function of x?1. x² + y = 1 b) -x + y² = 1

***y = 1 - x²***This describes \_\_\_\_\_\_\_\_\_\_\_\_ as a function of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.Suppose we give it the name “***f***.” Then you can use the function notation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_The symbol \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is read as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_or simply \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Function Notation The Symbolic Form:The symbol \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ corresponds to the ***y***-value for a given ***x***. Therefore, you can write:y = f(x)(Now label all parts)1. {(2, 3), (3, 0), (5, 2), (4, 3)}
2. {(4, 1), (5, 2), (5, 3), (6, 6), (1, 9)}

Given f(x) = 3x - 2, find1. f(3)
2. f(-2)

Given *h*(z) = z2 - 4z + 9, find *h*(-3)Given g(x) = x2 – 2, find g(4)Given f(x) = 2x + 1, find -4[f(3) – f(1)].Let s(x) = -x² + 4x +1, find s(x+2).Up to now, we’ve been looking at functions represented by a single equation. Functions can also be represented by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,each corresponding to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.These are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ functions.Example of a Piecewise Function: Evaluate f(x) when x=0, x=2, x=41. x = 0
2. x = 2
3. x = 4
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