Trigonometry

Section P-6 (Part 1): Analyzing Graphs of Functions

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

**Objectives**:

* Students will be able to analyze the graph of a function (zeros, domain, range, and function values).

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| **Main Idea** | **Notes** |
| **Vocabulary:**    **Example 1: Finding the Zeros of a Function** | The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  is the collection of ordered pairs (x, f(x)) such that x is in the domain of the function.  Label all parts of the graph below:    Remember, if a graph of a function*, f*, crosses the *x*-axis, then the function has an  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  The *x*-intercept(s) of a function are called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the function.  Find the zeros of the function. Remember, you need to find all values that satisfy the equation *f(x) = 0*. |
| **Vocabulary:**  **Example 2: Determining the Domain and Range from the Graph of a Relation**  **Example 2 (Continued): Determining the Domain and Range from the Graph of a Relation**  **Example 3: Finding Function Values**  **Vocabulary:**  **Example 4: Find the Domain and Range**  **Homework:** | Think of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_as the set of x values that work.  Think of the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as the set of y values that work.  Remember: To find the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a function, find all values  that make the function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and throw them out  of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Find the domain and range of each graph. Write your answer in interval notation.  ***x***  ***y***  ***x***  ***y***  ***x***  ***y***  ***x***  ***y***  ***x***  ***y***  ***x***  ***y***  Given the graph, find each function value by inspecting the graph.  ***x***  ***y***  *f*(x)   1. *f*(0) = \_\_\_\_\_\_\_\_\_\_\_ 2. *f*(4) = \_\_\_\_\_\_\_\_\_\_\_ 3. *f*(-5) = \_\_\_\_\_\_\_\_\_\_\_ 4. *f*(-6) = \_\_\_\_\_\_\_\_\_\_\_   A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dot indicates that the point belongs to the graph.  An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dot indicates that the point does not belong to the graph.  An\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ indicates that the graph extends indefinitely in the direction in which the arrow points.  Use the graph of the function *f* to answer the following questions.  **-5**  **-4**  **-3**  **-2**  **-1**  **1**  **2**  **3**  **4**  **5**  **5**  **4**  **3**  **2**  **1**  **-1**  **-2**  **-3**  **-4**  **-5**   1. What is the domain of *f* (***x***)? 2. What is the range of *f* (***x***)? |