EXERCISE #5

Functions: Vertical Line Test and Domain

Date: _____

Software Required:
Power Point

Group Members:

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The student will learn how to identify a function by looking at the graph of equations. The student will also practice identifying the domain of various functions.

PART 1

Functions: Vertical Line Test

1. Open the PowerPoint file titled "functions" and read slides #1-3 to answer the following questions.
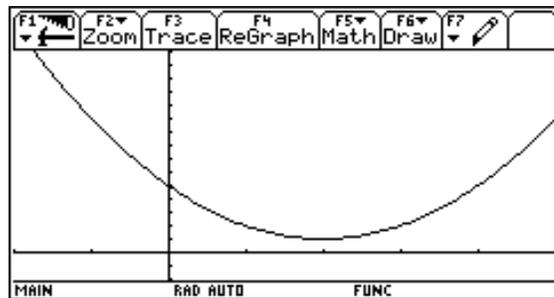
−   What is a function?

−   How can you identify a function from the graph of an equation?

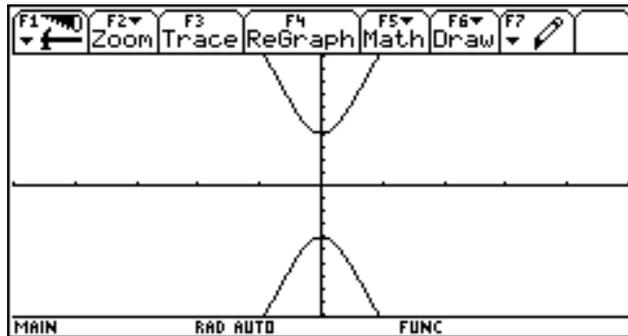2. Follow the directions for slides #4-15 and answer the following questions.

−   Is this the graph of a function?
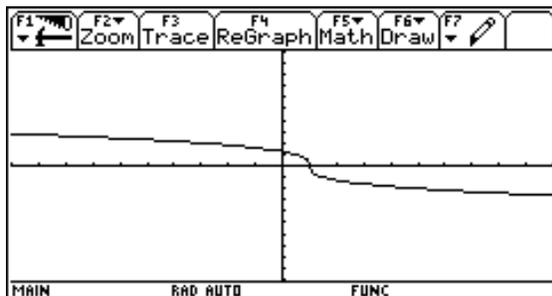
Why or Why not?

3. Is this the graph of a function?
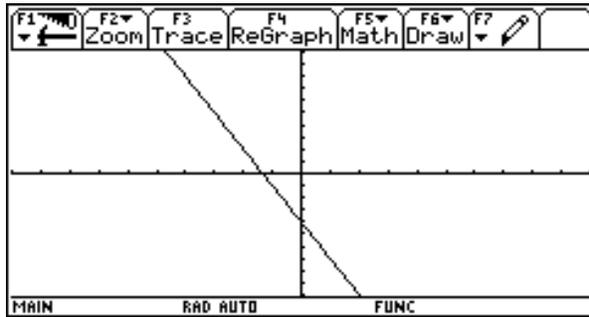
Why or Why not?

4. Is this the graph of a function?
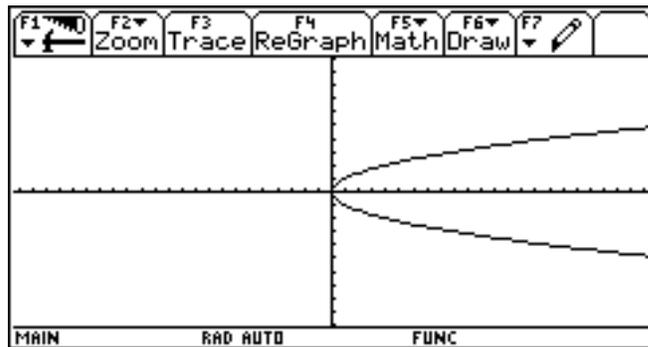
Why or why not?

5. Is this the graph of a function?

Why or why not?

6. Is this the graph of a function?

Why or why not?

PART II

Domain of a Function

1. 1 Continue exploring PowerPoint file "functions", looking at slides #16-32 to answer the following questions.

   – What is one restriction on the domain of a function?

   – What is the domain of this function?

   $$f(x) = \frac{x^2 + 1}{x - 2}$$

   – What is the domain of this function?

   $$f(x) = \frac{x^2 + 2x - 1}{x(x + 3)(x - 4)}$$

2. What is another restriction on the domain of a function?

   – What is the domain of this function?

   $$g(x) = \sqrt{2x + 3}$$

‒ What is the domain of the function f(x) = x-2? f(x) = 4x-7? f(x)=(x+5)(x-2)?

Why?

‒ What is the domain of this function?

$$s(t) = \frac{t+4}{t^2 - 9}$$

‒ What is the domain of this function?

$$f(x) = x^3 - 2x + 9$$

‒ What is the domain of this function?

$$g(x) = 2 - \sqrt{3x}$$