

# MTH 28.5 LECTURE NOTES (Ojakian)

## Topic 13: Functions

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### OUTLINE

References: 3.5, 3.6 (parts of!)

1. Function Notation
  2. Graphing Function
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#### 1. Function Notation

$NAME(x) = [\text{PUT ALGEBRAIC EXPRESSION}]$ .

##### **PROBLEM 1.**

(a) Let  $f(x) = 3 + x^2$ .

Find the value  $f(9)$ . Evaluate  $f(-5)$ .

(b) Let  $g(x) = \frac{3}{1-x}$ .

Find  $g(16)$ . Find  $g(4)$ .

**PROBLEM 2.** *The Empire State Building has 102 stories and is 1454 feet tall (including its antenna). It was the world's tallest building from 1931 to 1970 (reference: Wikipedia). Find out how much time it will take an object dropped from the top to hit the ground.*

*The time, in seconds, that it takes for an object to fall, from rest, is given by the function:*

$$f(d) = (1/4)\sqrt{d},$$

*where  $d$  is the distance fallen (in feet); reference: BARATTO & BERGMAN (4TH ED)-p. 727, ex 87.*

#### 2. Graphing Functions

(a)

**Definition 1.** *The **graph of a function** is the following points on the plane:*

*The points  $(x, y)$  such that  $x$  is an input and  $y$  is an output.*

**PROBLEM 3.** *Graph the function  $f(x) = 2x + 1$*

(b) Checking if points are on a graph. Do examples.