

## Unit 3: QUADRATIC FUNCTION

### FMPC 10 Review:

**A relation** = a relationship or a correspondence between two sets called the domain (input values =  $x$ ) and the range (output values =  $y$ ) such that to each element of the domain, there is assigned one or more elements of the range.

**A function** = a special type of a relation where for every input value from the domain there is exactly one output value from the range.

- A graph of a function passes the vertical line test

Every function is a relation but only some relations are function.

To define a relations three things must be known: the domain set, the range set, and the rule of assigning of the output value to the input value.

Any function can be described in many different ways:

Domain is the set of all input values ( $x$ ) for which the relation is defined.

Range is the set of output values ( $y$ ) which the relation can attain.

There are several ways to describe the domain and the range:

1. In a sentence
2. On a number line
3. As an interval
4. In a set notation

### Linear Function:

- A polynomial function of degree one
- There are several types of the equation of a line:
  - All lines except a vertical line are functions.
  - All lines except the horizontal and vertical line have the same domain (all real numbers) and the same range (all real numbers).
  - The horizontal line is sometime referred as the constant function. Its domain is all real numbers, but its range is only a single real number which depends on the equation of the horizontal line.