

# Functions

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## Introduction

**Definition:** A Function is correspondence between input numbers  $x$  – *values* and output numbers  $y$  – *values* than sends each input number  $x$  – *value* to exactly one output number  $y$  – *value*. Sometimes a function is described with an equation

**Example:**  $y = x^2 + 1$  which can also be written as  $f(x) = x^2 + 1$   
What is?  $f(2)$ ?

solution:

put 2 in  $f(x) = x^2 + 1$   
so it becomes

$$f(2) = 2^2 + 1$$

$$f(2) = 4 + 1$$

$$f(2) = 5$$

what is  $f(a+3)$ ?  
put  $a + 3$  into  $f$

$$f(a + 3) = (a + 3)^2 + 1$$

$$f(a + 3) = a^2 + 3^2 + 2.a.3 + 1$$

$$f(a + 3) = a^2 + 9 + 6a + 1$$

$$f(a + 3) = a^2 + 6a + 10$$