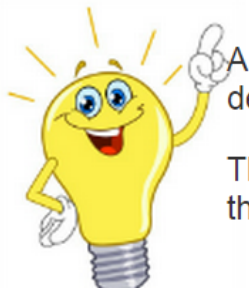

A **function** is a relationship between two variables. The first variable determines the value of the second variable.

The value of the first variable corresponds to one and **only one** value for the second variable.

Standard $y = 2x + 5$

find y when $x = 3$

function notation

$f(x) = 2x + 5$

$f(3) = 2(3) + 5$

$6 + 5$

$f(3) = 11$

$f(x) = 2x + 5$ & $y = 2x + 5$ are the same.

$g(x) = 4x - 4$

find $g(10)$

$g(x) = 4x - 4$

$g(10) = 4(10) - 4$

$g(10) = 40 - 4$

$g(10) = 36$

$f(x) = \frac{x}{5} + 4$

$x = 50$

$y = ?$ find

$f(50) = \frac{50}{5} + 4$

$y = \frac{x}{5} + 4$

$y = \frac{50}{5} + 4$

$f(50) = 10 + 4$

$y = 14$

$f(50) = 14$

$$h(x) = 4x - 12$$

$$h(4) = 4(4) - 12$$

$$h(4) = 16 - 12$$

$$h(4) = 4$$

Function Notation

In the previous lesson, you learned how to identify a function by analyzing the domain and range and using the vertical line test.

Now we are going to take a look at **function notation** and how it is used in Algebra.

The typical notation for a function is f(x). This is read as "f of x" This does NOT mean f times x. This is a special notation used only for functions.

However, f(x) is not the only variable used in function notation. You may see g(x), or h(x), or even b(a). You can use any letters, but they must be in the same format - a variable followed by another variable in parenthesis.

These mathematical statements all mean the same!

$y = 2x + 3$ – linear equation

$f(x) = 2x + 3$

$g(x) = 2x + 3$ } linear functions

$h(a) = 2a + 3$

Notice y is replaced with f(x), g(x), even h(a).

This is what is known as function notation. They all mean exactly the same thing. You graph all of these exactly as you would y = 2x +3. We are just using a different notation.