Evaluating Functions – Pre-5

Topic: Evaluating Functions **Date:**

Objectives: SWBAT (Evaluate Given Function at Given Value)

Main Ideas:	Assignment:

Function Notation

The common notation of a function is usually written as,

$f(x)$ – this does not mean the multiplication of f and x

It is read as

f is a function of x
or
f is some expression involving the variable x

Functions can also be written in different ways using other variables such as:

$g(x), h(x), and\ k(x)$

In addition, functions may take other input values other than x.

$f(a), h(r), and\ k(m)$

Main Focus

The key idea is always remember that the variable **outside** the parenthesis is the **"name"** of the function (also known as the **output value**), while the variable **inside** the parenthesis is the **input value** of the function.

Output value

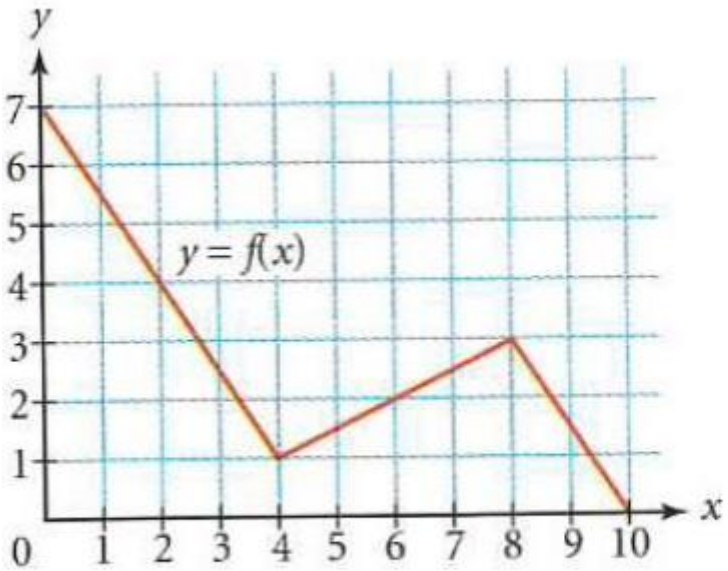
Function k → $k(m) = m^2 + m - 8$

Input value or in term s of m

Evaluating Functions

To evaluate a function is to: REPLACE (substitute) the defined variable with the given number or expression. Examples:

Given: $h(t) = \lvert t - 2 \rvert + 3$**; find** $h(6)$	**Given:** $g(a) = 3^{3a-2}$**; find** $g(1)$
Given: $k(m) = m^3 - 5m^2$**; find** $k(-4)$	**Given:** $f(n) = n^2 - 2n$**; find** $f(n^2)$

<table>
<tr><td rowspan="2">Your Turn</td><td>Given: $h(t) == -2 \cdot 5^{-t-1}$; find $h(-2)$</td><td>Given: $f(x) = x^2 - 3x$; find $f(-8)$</td></tr>
<tr><td>Given: $k(a) = -4^{3a+2}$; find $k(a-2)$</td><td>Given: $p(a) = a^3 - 5$; find $p(x-4)$</td></tr>
<tr><td>Function Value</td><td>Given: $f(x) = 3x - 7$; find x when $f(x) = -8$</td><td>Given: $h(t) = x^2 - 15$; find t when $h(t) = 21$</td></tr>
<tr><td>Graphs</td><td colspan="2">Look at the graph below
 

In the graph above f(4) = 1.
Find the following values of the function.
f(6) = f(2) =
f(0) = f(5) =
For which values of x is this statement true?
f(x) = 1</td></tr>
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