NOTES U1B L1 Function Notation Name: _____HR:_____

UNIT 1B **TARGET SKILL(s): Use function notation, substitute expressions into functions.**

Lesson 1

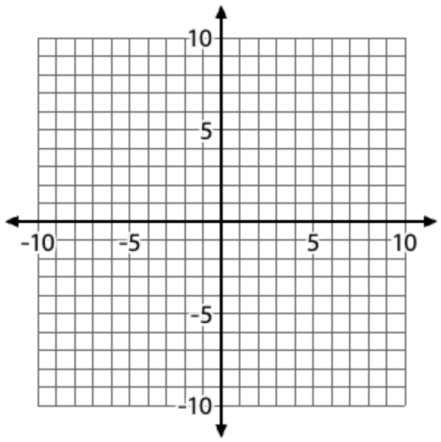
What is a function?

A relation in which each input maps to exactly 1 output value.

Ordered Pairs:

Equation:

Graph:



Definition: **FUNCTION:** any input to output mapping where each input pairs with only one output.

If an equation represents a function (each x pairs with only one y value), then mathematicians use a special notation:

Function Notation: $y = f(x)$

▶ Instead of writing , write:

▶ Read as:

Function Notation	$f(x) = \|3x\| - 5$	$g(x) = 4x^2 + 10$	$h(x) = \frac{3}{4}x + 5$
Question	$f(-2)$	$g(-3)$	$h(-12)$
Input:	$x = -2$		
Evaluating Function:			

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You Try: Directions: Evaluate the functions at the given INPUT value.

1. If $f(x) = 2x + 3$, find $f(4)$.	2. If $g(x) = -3x + 7$, find $g(-2)$.	3. If $h(x) = \frac{1}{2}x - 5$, find $h(10)$.

INPUTS can be Variable Expressions.

Function Notation	$f(x) = \lvert x \rvert - 5$	$g(x) = 4x^2 + 10$	$h(x) = \frac{3}{4}x + 5$
Question	$f(x + 4)$	$g(x - 5)$	$h(8x)$
Input:			
Evaluating Function:			

You Try: Input the variable expression and simplify any linear expressions.

4. If $f(x) = x^2 + 6$, find $f(x + 1)$.	5: If $g(x) = 3x - 2$, find $g(x + 1)$.	6. If $h(x) = \frac{1}{2}x + 7$, find $h(4x)$.
7. If you have \$60 in savings and you add \$25 dollars per week to your savings, write a function to determine your savings: S = savings(\$) and w = # of weeks S(w) =	8: If your phone bill each month is \$40 plus \$10 per gigabyte of data use, write a function to determine the monthly bill: B = monthly Bill (\$) and d = amount of data used (Gb). B(d) =	10. a. Use your answer from 7 to find the S(52) and explain what it means. b. Use your answer from 8 to find the B(12.8) and explain what it means.