




**Objective:** Evaluating Functions with Function Notation

**Homework FN2–** NYA p.259 #9, 11, 13, 18, 27, 29, 43

**Do Now:** Explain what a function is in your own words.

**Exam Prep:** Which coordinate is generated by the function  $y = 5x - x$  ?

- A) (8, 32)    B) (0, 1)    C) (20, 5)    D) (4, 24)



*Functions are all about input and output. The notation or way you write it can help you see the truth behind all of it.*

*As an American, I seek the truth. As a chicken, I seek corn kernels and dirty water.*

**Function Notation**  
 Instead of using  $y$ , use  $f(x)$ .  
 This is read “f of x.”

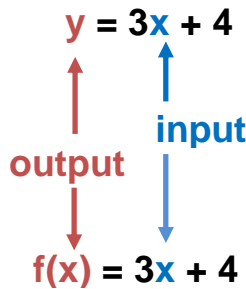
$y = 2x - 5$  would be  $f(x) = 2x - 5$

You to see the input and output values.

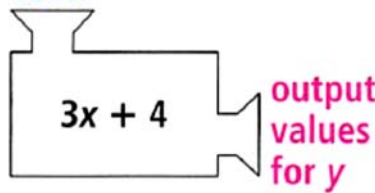
$f(-2) = 2x - 5$
$f(-2) = 2(-2) - 5$
$f(-2) = -9$

**Words and Notations Used With a Function**

Domain	Range
input	output
$x$	$f(x)$
$x$	$y$



input values for  $x$



Input	Output
$x$	$y$
1	7
2	10
3	13

**Find the Range**

$f(x) = -4x$ $x = \{0, 1, 5, 10\}$ $y = \{ \quad , \quad , \quad , \quad \}$	$g(x) = 20 - x$ $x = \{20, 8, 0, -1\}$ $y = \{ \quad , \quad , \quad , \quad \}$
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Practice: Fill in the table

Function	Domain	Range
$f(x) = (x - 1)^2$	{2, 4, 6, 8}	
	{1, 2, 3, 4...}	{-1, -2, -3, -4...}
$f(x) = \sqrt{x}$		{8, 9, 10, 11, 12, 13}
$f(x) = 2x - 1$	{positive integers}	
	{integers}	{non-negative integers}

Evaluating Functions

$f(x) = -5x + 1$ , when $x = 6$ .	$f(x) = x^2 + x$ , when $x = 3$ .	$f(x) = \frac{x}{2} + 10$ , when $x = -18$ .
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Using Function Notation

<p>Use the following:</p> $f(x) = 10x + 3$ $g(x) = x^2$	1. $f(0)$	2. $f(2)$	3. $g(3) + f(4)$
	4. $2g(5)$	5. $g(h)$	6. $f(x + 1)$

