

DATE:

**ESSENTIAL QUESTION(S):** How do you write a linear equation in function notation? How do you evaluate a function? How can you solve for a function given that output of a function?

**REVIEW:**

$x = \text{input}$

$f(x) = \text{output} = y$

$f(x) = y$

Function notation needs to be in simplest form. combine any like terms.

$f(x) = mx + b$

function names

$f(x), g(x), h(x), \text{etc}$

no  $x(x)$  or  $y(x)$ !

inside the function goes inside the equation  
outside the function outside the equation

**NOTES:**

Vocabulary	Definition
Function Notation	different way of writing equations using input(x) and output f(x)

**Example 1:**

Write the following linear equations as function notation.

a.  $y = -2x + 5$

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

b.  $y = 4x - 2 - 6x$

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

c.  $y = -11 + \frac{2}{3}x + 8$

$f(x) = \frac{2}{3}x - 3$

d.  $y = 7x - 9$

$f(x) = 7x - 9$

**Example 2:**

Given the following  $f(x) = 2x - 3$  and  $g(x) = -x - 5$ . Find the following the values given below.

a.  $f(2) = 2(2) - 3 = 1$

b.  $f(-5) = 2(-5) - 3 = -13$

c.  $g(-3) = -(-3) - 5 = -2$

d.  $g(11) = -(11) - 5 = -16$

**Example 3:**

Given the function  $h(x) = -9x + 3$  and the given output. Find the input to make the function true.

a.  $h(x) = 12$

$-9x + 3 = 12$   
 $-3 \quad -3$

$-9x = 9$   
 $-9 \quad -9$

$x = -1$

b.  $h(x) = -51$

$-51 = -9x + 3$   
 $-3 \quad -3$

$-54 = -9x$   
 $-9 \quad -9$

$6 = x$

Answer the following function notation using the function slider.

1.  $f(x) = 2x + 3$

2.  $f(5) =$

3.  $f(-1) =$

4.  $f(0) =$

5.  $f(a) =$

6.  $f\left(\frac{1}{2}\right) =$

$2(0) + 3 = 3$

Tape Here

$x$

Tape Here

$x$

$f(-1) = 2(-1) + 3$

$a$

$\frac{1}{2}$

$a$

$\frac{1}{2}$