

Notes: Function Notation

The equation $y = 9 - 4x$ represents a function.

You can use the letter f to name this function and then use **function notation** to express it. Just replace y with $f(x)$. (Note: In function notation, the parentheses do *not* mean multiplication.)

You read $f(x)$ as “ f of x ,” which means “the output value of the function f for the input value x .”

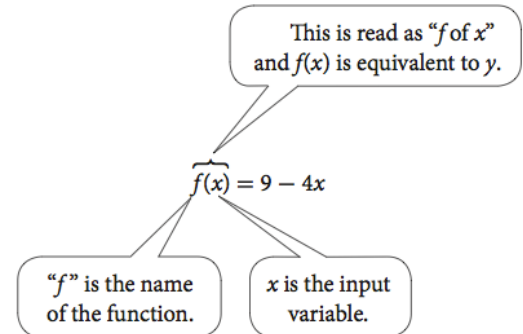
Example: Find $f(2)$. What output do you get when you input 2?

$$f(2) = 9 - 4(2)$$

When you input 2 into

$$f(2) = 1$$

function f the output is 1.



Evaluating Functions Using Function Notation

Ex. 1: Given $f(x) = 7x - 1$, find $f(-2)$.

Ex. 2: Given $g(x) = x^2 - 4$, find $g(-5)$.

Ex. 3: Given $h(x) = 5x - 1$, find x if $h(x) = 9$

Ex. 4: Given $f(x) = -x + 2$, find x if $f(x) = 6$

Let's Practice!

Evaluate the following expressions given the functions below:

$$f(x) = x^2 + 7$$

$$g(x) = -3x + 1$$

$$h(x) = \frac{12}{x}$$

$$j(x) = 2x + 9$$

a. $g(10) =$

b. $f(3) =$

c. $h(-2) =$

d. $j(7/4) =$

e. $h(a)$

f. Find x if $g(x) = 16$

g. Find x if $h(x) = -2$

h. Find x if $f(x) = 23$

Not all functions are expressed as equations. Here is a graph of a function g . The equation is not given, but you can still use function notation to express the outputs for various inputs.

Examples:

1. $g(0) =$ _____ 2. $g(4) =$ _____ 3. $g(6) =$ _____

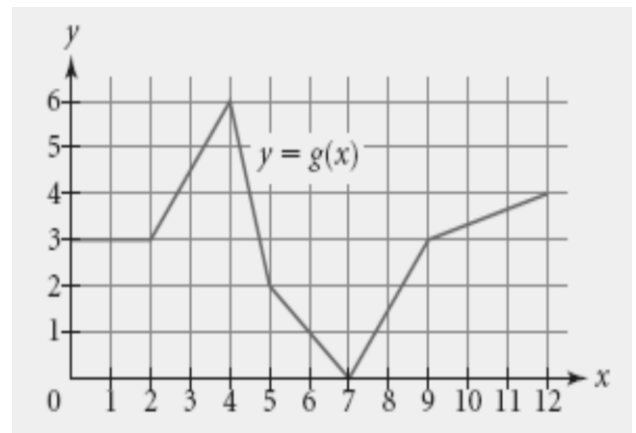
4. Can you find x -values for which $g(x) = 3$? _____

5. $f(x)=6$, what is x ? _____

6. $f(x)=0$, what is x ? _____

7. What is the domain of the function? _____

8. Range? _____



You Try: Use the graph of $y = f(x)$ at the right to answer each question.

a) $f(4) =$

b) $f(6) =$

c) For what x value(s) does $f(x) = 2$?

d) For what x value(s) does $f(x) = 1$?

e) How many x-values make the statement $f(x) = 0.5$ true?

f) For what x-values is $f(x)$ greater than 2?

g) What are the domain and range shown on the graph?

