

Algebra RH

Essential Question: What is function notation? How do we represent functions using function notation?

Do Now:

A function can be written in function form by replacing the “y” with “f(x)” read as “f of x.”

Example:

- $y = 3x + 1$ is a linear function. $y = 3x + 1$ written in function notation is $f(x) = 3x + 1$.
- $y = 3x + 1$ can also be written as $g(x) = 3x + 1$ or $h(a) = 3a + 1$
- The solutions to $y = 3x + 1$ are (x, y) , for $f(x) = 3x + 1$ the solutions are $(x, f(x))$

Make a table of values for $f(x) = 3x + 1$ using the domain $\{0,1,2,3\}$.

$f(x) = 3x + 1$

x	$f(x)$

Representing Functions Using Function Notation



Think about this:

Since not every equation in two variables is a function, we use function notation to describe functions.

$y = 2x + 3$ written in function notation is _____.

Input x	Function Rule $f(x) = 2x + 3$	Output $f(x)$	Ordered Pairs $(x, f(x))$
-3			
4			
7			

More Functions

1. Given the following functions, answer each question

$$f(x) = \frac{x-6}{2}$$

$$g(x) = \sqrt{2x+1}$$

$$h(x) = \frac{x}{3} + 7$$

$$a(x) = x^2 + 2x - 1$$

a) $f(2) =$

b) $g(4) =$

c) $a(2) =$

d) $h(-9) =$

e) $f(3) =$

f) $g\left(\frac{19}{2}\right) =$

g) $f(a+1) =$

h) $g(-13) =$

i) $a(-4) =$

j) $a(x-3) =$

k) $h(-6a) =$

l) Solve for x if $f(x) = 13$

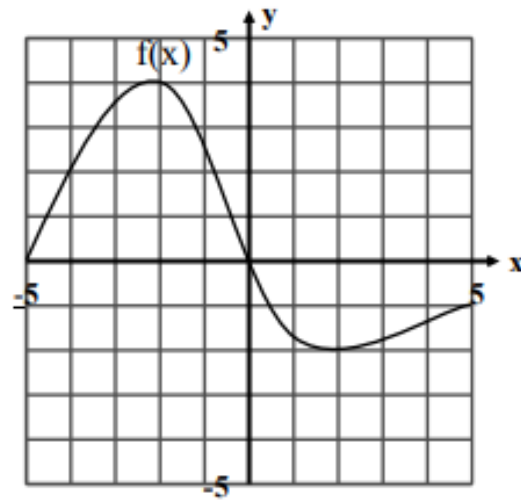
m) Solve for x if $h(x) = -2$

n) If $b(x) = 2f(x) - 1$ then what is $b(6)$?

2. Find the range of the function $h(x) = 2x - 5$ when the domain = $\{-1, 0, 1, 2, 3\}$.

3. Using the graph to the right of $f(x)$

- $f(2) =$
- $f(0) =$
- $f(-4) =$
- Find x if $f(x) = -2$
- Find x if $f(x) = 0$



4. Given the functions $h(x) = -3(x + 1)$ and $g(x) = x^2 - 5$

- Evaluate $h(2) + g(-1)$
- Find $h(x) + g(x)$ in standard form
- Find $h(2a) + g(a)$
- True or False? $g(2.5) < h(-1.5)$