

Function Notation

Suppose we want to define a quadratic function.

OLD Method: $y = x^2 + 3x - 4$

NEW Method $f(x) = x^2 + 3x - 4$

OLD Method:

NEW Method:

Find the y -value of $y = x^2 + 3x - 4$ when x is equal to 3.

Besides using $f(x)$ we could also name functions $g(x)$, $h(x)$, $P(n)$, $V(t)$ etc.

Very useful for working with several functions at once. Also useful for graphing.

Example: Let $f(x) = 2x - 3$

Evaluate or simplify the following:

a) $f(-2)$

b) $f(0)$

c) $f(2a)$

Example: Erika works at an electronics store and is paid every week according to the equation $E(s) = 0.032s + 300$, where $E(s)$ is her earnings based on s sales in dollars.

a) Evaluate $E(4000)$ and interpret its meaning.

b) When does $E(s) = 600$?

Example Let $f(x) = -2x + 3$ and $g(x) = x^2 - 3x + 2$

a) Find $g(-2)$

b) Find $f\left(\frac{3}{4}\right)$

c) Find $2f(-1) + 3g(2)$

d) Find $f(g(4))$

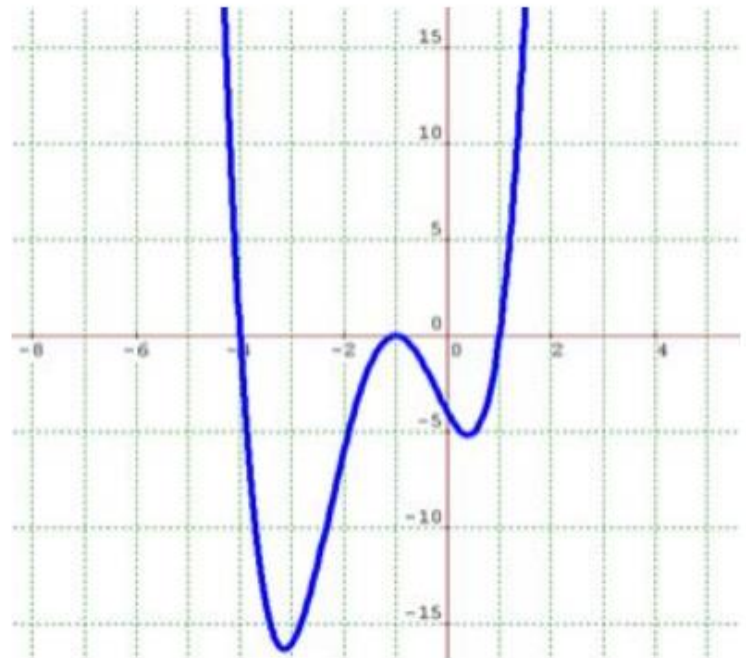
e) When is $f(x) = 5$?

Example The graph represents a function $f(x)$.

a) Find $f(-2)$

b) Find $f(0)$. What is this point called?

c) When does $f(x) = 0$? What is this point called?



Never do this.

$$g(x) = 3x^2 - 2$$

$$g(2) = 3x^2 - 2$$

$$g(2) = 3(2)^2 - 2$$

$$= 10$$

OR This:

$$g(x) = 3x^2 - 2$$

$$g(x) = 3(2)^2 - 2$$

$$= 10$$

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