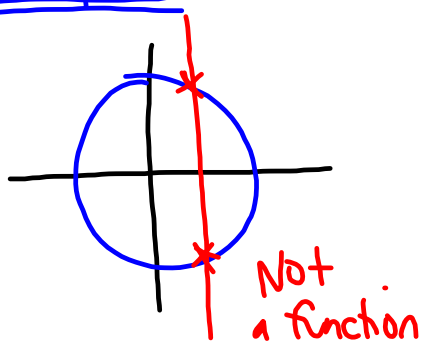
5.2 continued

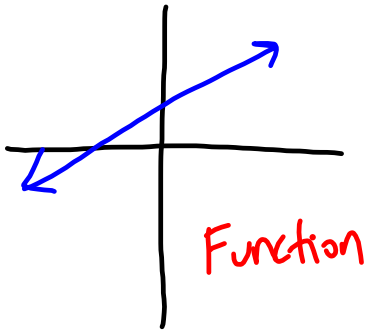
Vertical Line Test: a way to test if a graph is a function.

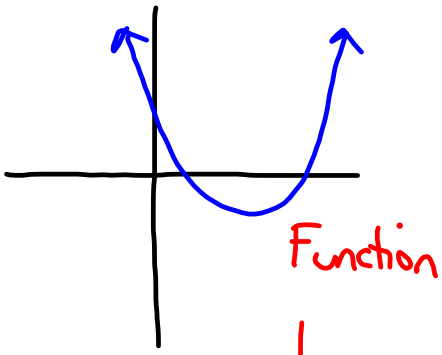
Remember, a function can only have one y-value for each x-value.

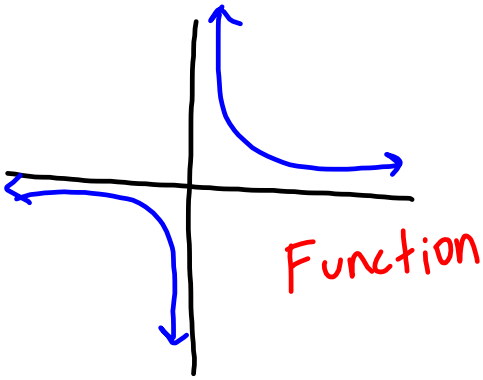
For a graph, you can't hit two y-values vertically to be a function.

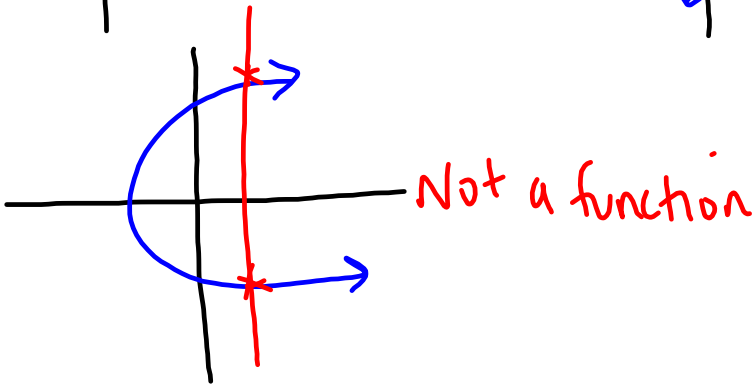
Examples











Function Notation $f(x)$, $H(t)$

"f" of "x", "H" of "t"

↳ another way of representing functions, to show one variable depends on the other.

Rewrite each as function notation

1. $h = -4.9t^2 + 5$

$h(t) = -4.9t^2 + 5$

* 2. $y = -2x - 8$

$f(x) = -2x - 8$ * Not $y(x)$

3. $P = -\frac{n}{4}$

$P(n) = -\frac{n}{4}$

Solving equations in function notation

Grade 9: Solve $y = 3x + 10$ if $x = -2$

$$y = 3(-2) + 10$$
$$= -6 + 10$$
$$y = 4$$

This is the same as; $f(x) = 3x + 10$, find $f(-2)$.

$$f(-2) = 3(-2) + 10$$
$$= -6 + 10$$
$$f(-2) = 4$$

* do not divide

2. $P(n) = \frac{-n}{5}$, find $P(200)$

$$P(200) = \frac{-200}{5} = -40$$

3. $h(t) = -2t^2 + 10t - 1$

find $h(4)$

$$h(4) = -2(4)^2 + 10(4) - 1$$
$$= -32 + 40 - 1$$
$$h(4) = 7$$

Grade 9: $y = -2x + 15$

Solve for x when $y = 55$

$55 = -2x + 15$

$55 - 15 = -2x$

$40 = -2x$

$\frac{40}{-2} = \frac{-2x}{-2}$

$-20 = x$

In function notation;

$f(x) = -2x + 15$, find x when $f(x) = 55$

$55 = -2x + 15$

Solve the same way.