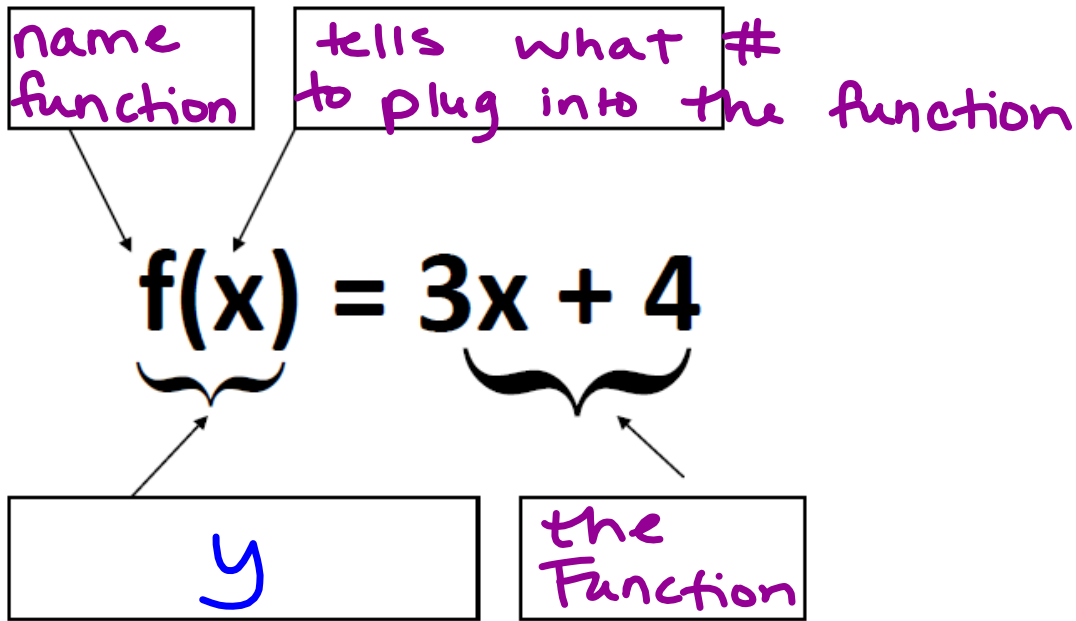
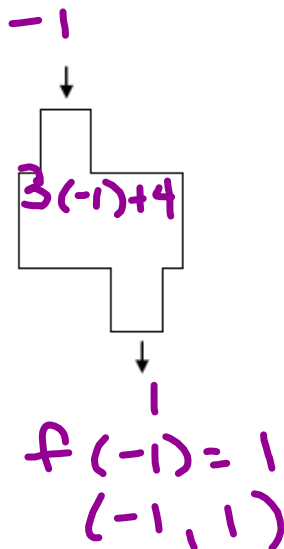
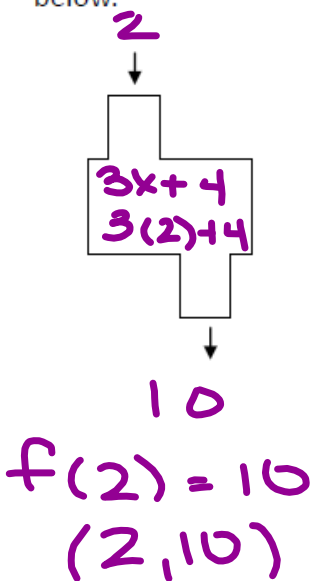


## Function Machines & Function Notation

A function can be thought of as a machine that assigns 1 output to every input



Find and illustrate  $f(2)$  and  $f(-1)$  using the function machines below.



Let  $f(x) = x^2 + 3$  and  $g(x) = x + 1$ .

Find the following values:

$f(3) = (3)^2 + 3 = 12$

$g(3) = 3 + 1 = 4$

$f(-2) = (-2)^2 + 3 = 7$

$g(0) = 0 + 1 = 1$

$f(2) + g(1) = f(2) = 2^2 + 3 = 7$   
 $g(1) = 1 + 1 = 2$

$7 + 2 = 9$

$g(-1) + f(1) = g(-1) = -1 + 1 = 0$

$f(1) = (1)^2 + 3 = 4$

$0 + 4 = 4$

~~$f(g(2)) =$~~

ex

$f(x) + g(x)$

~~$g(f(0)) =$~~

$(x^2 + 3) + (x + 1)$

~~$f(y) =$~~

$x^2 + 3 + x + 1$

~~$g(w) =$~~

$x^2 + x + 4$

ex

$f(x) - g(x)$

$(x^2 + 3) - (x + 1)$

$x^2 + 3 - x - 1$

$x^2 - x + 2$

ex

$3g(x)$

$3(x + 1)$

$3x + 3$