

# Functions as Equations

Functions can also be expressed using math symbols. If  $x$  is the input and  $y$  is the output, then the value of  $y$  depends on the value of  $x$ . The relationship between  $x$  and  $y$  is determined by the machine, which is also known as the rule or equation. The machine changes or transforms  $x$  into  $y$ . Therefore,  $y$  is a function of  $x$ .

The table below illustrates the function  $y = x/2$ .

Input (x)	Machine (Equation)	Output (y)	Relationship [ordered pair: (x,y)]
6	$6/2$	3	(6,3)
10	$10/2$	5	(10,5)
14	$14/2$	7	(14,7)

Notice that the machine transforms whatever the value of  $x$  is to  $y$  by cutting the value of  $x$  in half. What is the value of  $y$  when  $x$  is 50 or 100? The rule makes extending this pattern easy.

Now go to the [The Function Machine](#) for further practice.

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