

February 6, 2017  
 2.3 → Functions

① Relation: a set of ordered pairs

(blue, win)  
 (Red, loss)  
 (-2, 5)  
 (Horizontal, Vertical)

Feb 6-9:50 AM

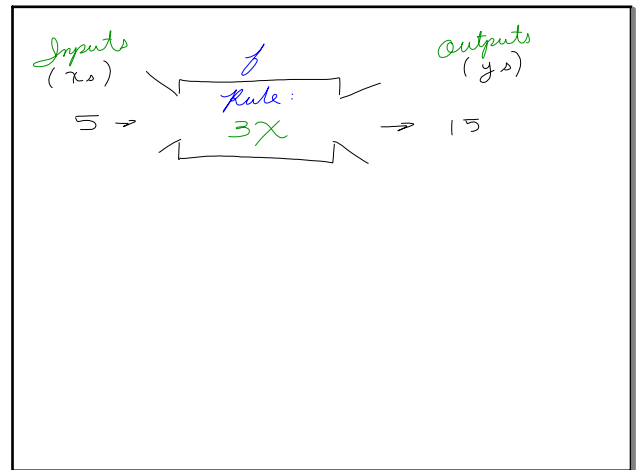
\* All Relations have a "Domain" and a "Range"

(Domain, Range)  
 (x, y)  
 (Horizontal Coordinate, Vertical Coordinate)  
 (Independent Variable, Dependent Variable)  
 (Input, output)

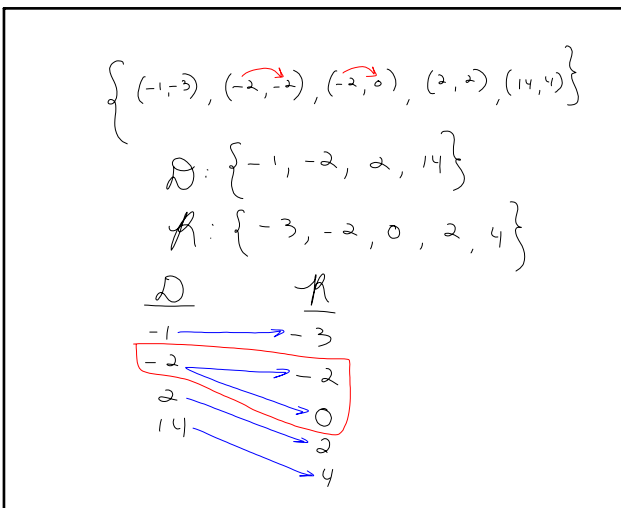
Feb 6-10:08 AM

Function: a relation that assigns to each element "x" in the Domain of "f" exactly one and only one element from the "Range" of "f".

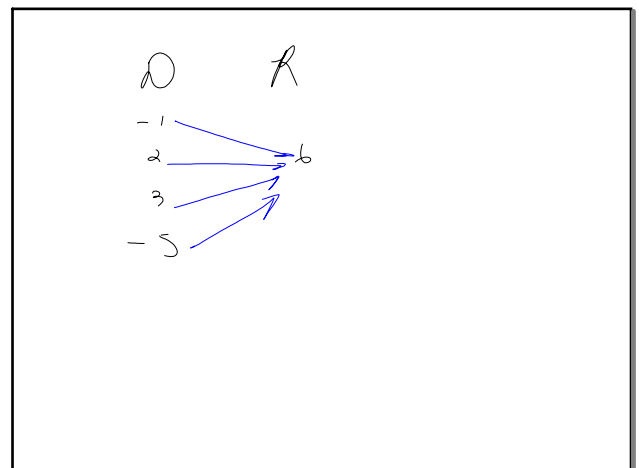
Feb 6-10:14 AM



Feb 6-10:17 AM



Feb 6-10:28 AM



Feb 6-10:32 AM

Function Notation

$$y = 3x$$

if  $x = 5$ , then  $y = 15$

$$f(x) = 3x$$

↑  
Input

$$y = f(x)$$

Feb 6-10:33 AM

$$y = |x| \rightarrow f(x) = |x|$$

↑  
Input

$x$	$f(x)$ or $y$
0	0
-1	1
-a	a
(x+y)	x+y

Feb 6-10:36 AM

Solve for  $x$   $y^2 + x = 5$  *Not a function*

$$x = 5 - y^2$$


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Solve for  $y$   $y^2 + x = 5$

$$\sqrt{y^2} = \sqrt{5-x}$$

$$y = \pm \sqrt{5-x}$$

↓

$$f(x) = +\sqrt{5-x}$$

$$g(x) = -\sqrt{5-x}$$

Feb 6-10:40 AM

\* Quiz on Wed.  
• Functions

\* No Class on Friday

Feb 6-10:47 AM