#10 Review of Functions 9/28/15

Function: ① every x-value has exactly one y-value
② pass the vertical line test
③ none of x values repeat

Function Wording:

$f(x)$ → does Not mean f times x
→ pronounce it "f of x"

independent variable goes in parenthesis

$f(x) = y$ → $f(x)$ is the independent variable where there is a point

$(x, y) \rightarrow (x, f(x))$

$g(x)$, $h(x)$, $s(t)$ are all ways to name functions

Independent/Dependent:

x: Independent y or $f(x)$ = dependent

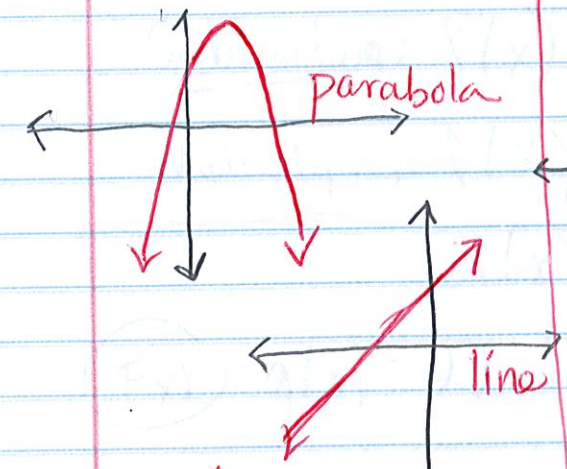
Example: Susie works x, hours at her job, and earns y dollars in her paycheck.
Paycheck depends on hours worked

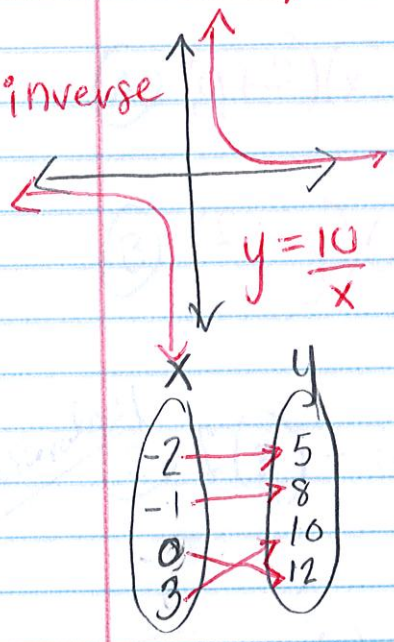
Vertical line test (VLT)

Def: If a vertical line can only pass through a graph once, the graph is a function.

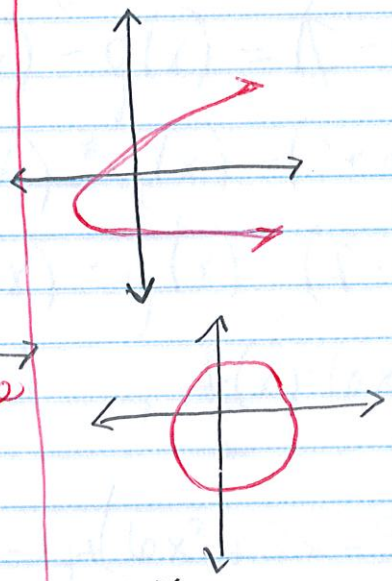
Examples	Non-Examples

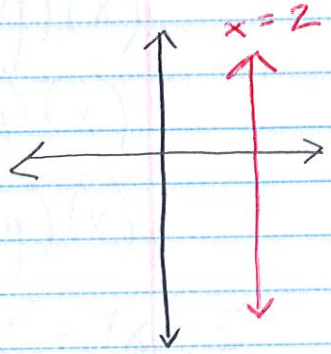
Pass (VLT)

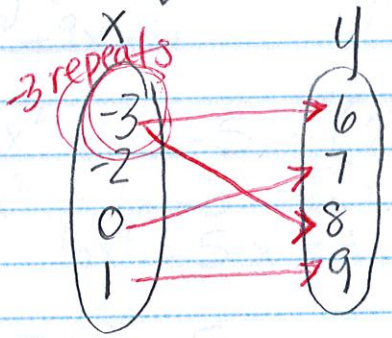




Do-Not Pass (VLT)







Examples

$f(x) = 2x + 1$ $\quad g(x) = x^2 + 1$

(A) $f(2) = 2(2) + 1$

$f(2) = 5$

replace x with 2

simplify

(B) $g(-5) = (-5)^2 + 1$

$g(-5) = 26$

(C) $f(x) = 1$

$1 = 2x + 1$

$-1 \quad -1$

$0 = 2x$ $\quad x = 0$

$f(0) = 1$

(D) $f(x) = 7$

$7 = 2x + 1$

$-1 \quad -1$

$6 = 2x$ $\quad x = 3$