Lecture 10/06/23

CRA Due today!
Quiz 5 today!

Defn: Let f be a function, ~~[illegible]~~ f^{-1}

A function f^{-1} is called the inverse to f if

$$f^{-1}(f(x)) = x \qquad f(f^{-1}(y)) = y$$

Think of f^{-1} as undoing f

$f^{-1}(f(x)) = x$

$f(f^{-1}(y)) = y$

#3 Book!

Warning! Not every function has an inverse!
~~How to find Inv~~ Will see soon!

How to find Inverse functions

#4 ~~Bio~~ Board
c + d

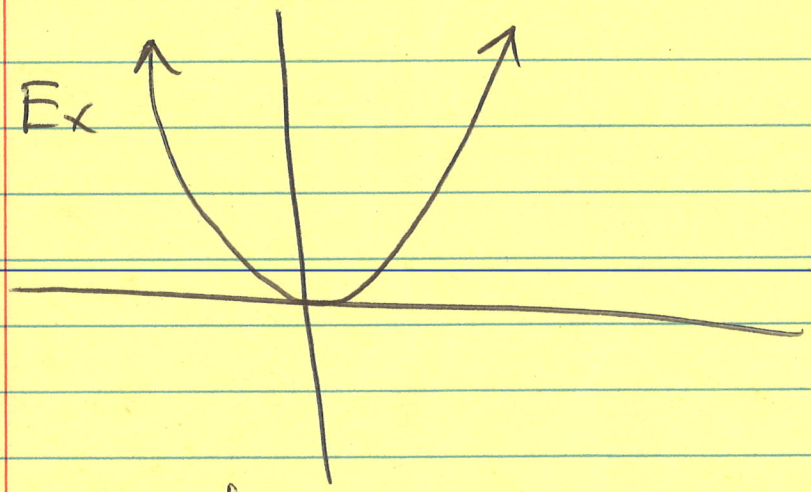
① Swap x - y ② Solve for y.

Def We say a function $f(x)$ is invertible if it has an inverse function f^{-1}. This is the same thing as saying every output of f has a unique input

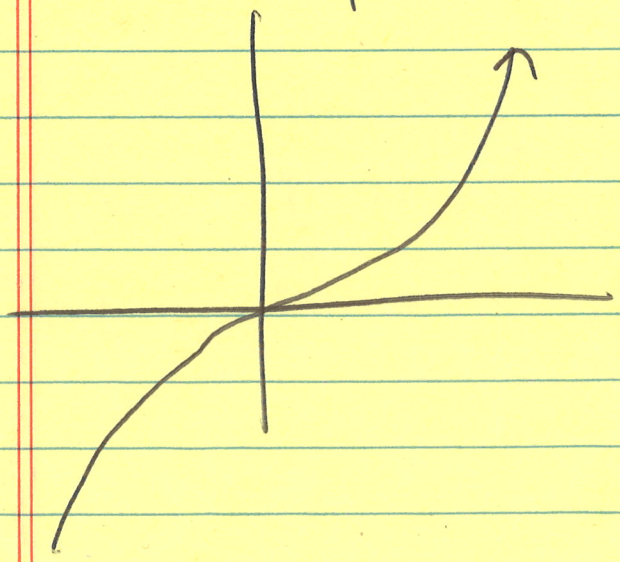
$\uparrow =$

H.L.T: A function is invertible if and only if every horizontal line passes through the graph at most once.

Ex



Not invertible!



Invertible!

Domain + Range of inverses

$f(x)$	$f^{-1}(y)$
Domain $f(x)$ = range $f^{-1}(y)$	Domain $f^{-1}(y)$ = Range $f(y)$
Range $f(x)$ = domain $f^{-1}(y)$	Range $f^{-1}(y)$ = domain $f(x)$
Ind var x	Ind var y
Dep var y	Dep var x

#5 #6 (10 min) #7 $\frac{}{5}$ #8 (Together)