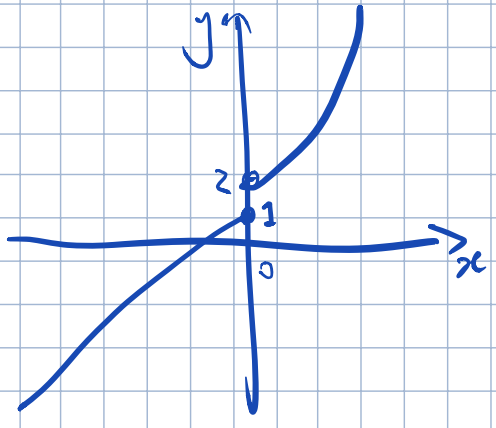
Problem Class Week 2

(2) Injection



$x_1 \neq x_2 \Rightarrow f(x_1) \neq f(x_2)$

$y = f(x_1) = f(x_2) \Rightarrow x_1 = x_2$

Surjection

$\forall y \exists x \quad y = f(x)$

A weird point around 0.

Injective

$x_1 \leq 0 < x_2.$

$x_1 + 1 = x_2^2 + 2$

$x_2^2 + 2 > 2$

$x_1 + 1 \leq 1$

$x_1 \neq x_2.$

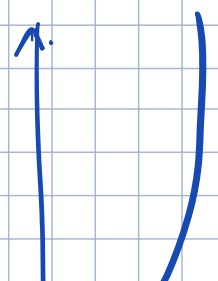
$y = 1.5$

$x > 0 \quad f(x) > 2$

$x \leq 0 \quad f(x) \leq 1$

Not surjective

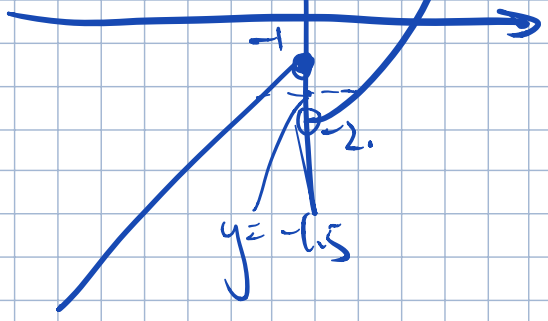
(3).



$x_1 - 1 = -1.5$

$x_1 = -0.5$

x_1^2 ...



$x_2 = 2 = -1.5$

$x_2^2 = 0.5$

$x_2 = \sqrt{0.5}$

Not injective