

Practice problems inverse functions

Exercise 1. Let $f(x) = 3x$. Find $f^{-1}(x)$ with two different methods :an algebraic one and a graphical one.

Exercise 2.

(1) Let $f(x) = \sqrt{x-1} + 2$. What is $f^{-1}(3)$?

(2) Let $g(x) = \sin(x) + x$. Find $g^{-1}(0)$.

(3) Let $h(x) = \frac{x+25}{x+10}$. Find $h^{-1}(2)$.

Exercise 3.

(1) Let $f(x) = e^{1/x}$. Check if $\frac{1}{\ln(x)}$ is its inverse function $f^{-1}(x)$.

(2) Let $g(x) = \frac{x+5}{x+3}$. Check if $\frac{5-3x}{x-2}$ is its inverse function $g^{-1}(x)$.