Let $f(x) = \frac{2x-1}{4^x + \sin x}$, $f^{-1}(f(x)) = x$.

$f(x) = x$ identity.

If $f^{-1}(0) = K$. Find K.

inverse under composition.

$$0 = \frac{2x-1}{4^x + \sin x} \rightarrow 0 = 2K - 1$$

$$K = \frac{1}{2}$$

$$a \xrightarrow{f} b \xrightarrow{f^{-1}} a$$

$$(a, b) \quad (b, a)$$

$$f' \qquad f^{-1}$$

$$(K, 0) \leftarrow (0, K)$$

$\sin^{-1} x$

$\arcsin x$

$\sin^2 x = (\sin x)^2$

$\frac{1}{\sin x} = \csc x$

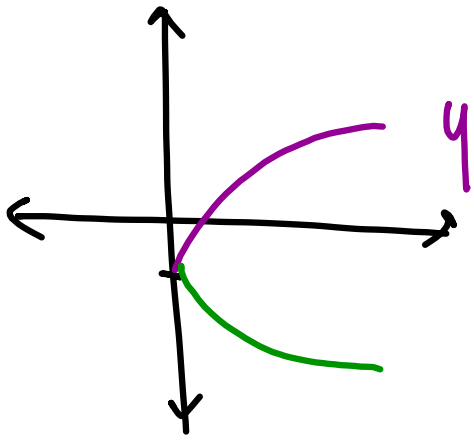
$f(x) = (x+1)^2$

1) Find inverse of $f(x)$, $g(x)$

2) to make $g(x)$ as a function of x
How should you restrict the domain of $f(x)$?

a) $y = (x+1)^2 \xrightarrow{\text{inv}} x = (y+1)^2$

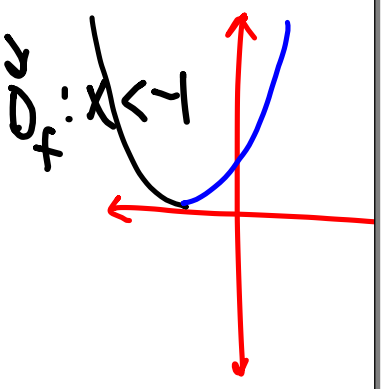
$\pm\sqrt{x} - 1 = y$



$y = \sqrt{x} - 1 \rightarrow D_f: x \geq -1$

$R_{gu}: y \geq -1$ $f(x) = (x+1)^2$

$R_{gd}: y < -1$



$D_f: x < -1$

Let $f(x) = x^2 - 6x + 5 = (x-3)^2 - 4$

$+9 \; -9$

How should the domain be restricted to make $g(x)$ a function, where $g(f(x)) = x$?