

Inverse of a Function

An inverse of a function can be obtained by:

- 1) mapping $(x,y) \rightarrow (y,x)$
- 2) reflecting the graph of the function over the line $y=x$

Example 1 ("points")

Given $f = \{(2,3), (5,9), (7,1)\}$, find the inverse.

State the domain and range of the f and of the f^{-1} .

Example 2 ("graph")

- (a) Graph the function $f(x) = (x+3)^2 + 1$ and also graph the inverse function.
- (b) State the domain and range of $f(x)$ and of $f^{-1}(x)$.
- (c) Is the inverse also a function?
- (d) Restrict the domain of $f(x)$ so that the inverse is a function.

Example 3 ("equations")

Find the inverse equation of each of the following functions:

- (a) $f(x) = 3x + 4$
- (b) $g(x) = x^3 - 1$
- (c) $h(x) = -x$
- (d) $m(x) = -2(x + 5)$