



College Prep Math
Inverse Functions Notes

Review of Function Composition

Example 1: Given $f(x) = x + 2$ and $g(x) = 4 - x^2$, find the following:

A. $(f \circ g)(x)$

B. $g(f(x))$

C. $g(g(x))$

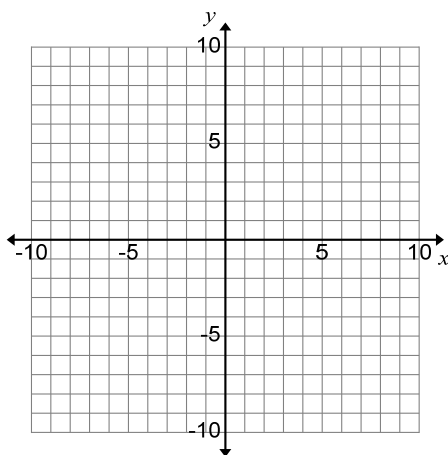
D. $f(f(x))$

What is an inverse function?

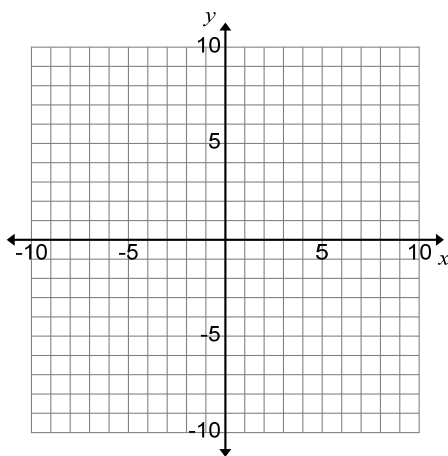
Example 2: Verify that $f(x) = \frac{5}{x-2}$ and $g(x) = \frac{5}{x} + 2$ are inverse functions.

Example You Try 2: Verify that $f(x) = x^3$ and $g(x) = \sqrt[3]{x}$ are inverse functions.

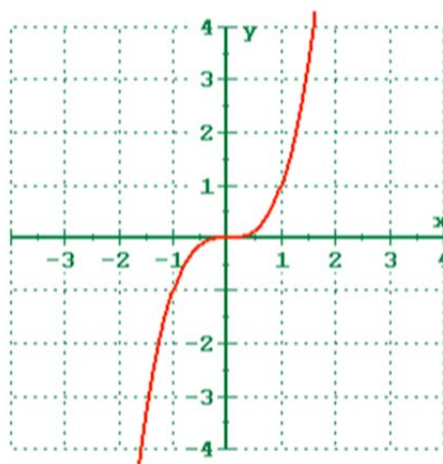
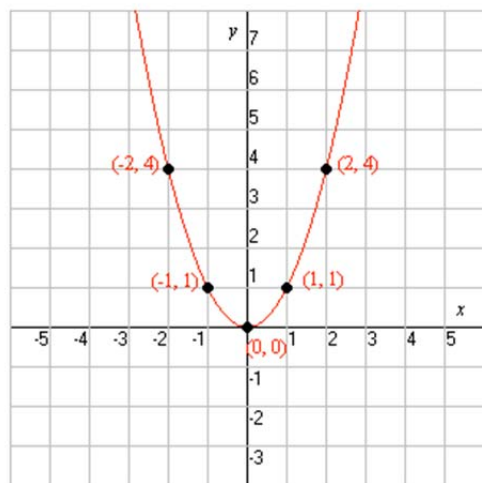
Example 3: Graph $f(x) = 2x - 3$, then find the inverse graphically. Graph the inverse on the same graph as $f(x)$.



Example You Try 3: Graph $f(x) = x^2$, then find the inverse graphically. Graph the inverse on the same graph as $f(x)$.



The Horizontal Line Test



Example 4: Find the inverse of $f(x) = \frac{5-3x}{2}$ algebraically.

Example You Try 4: Find the inverse of $f(x) = \sqrt[3]{x+1}$ algebraically