

Pg. 93 1.9 – Inverse Functions

The _____ of a function is simply found by switching the x and y variable. In other words, the inverse is constructed by switching all of the x and y-values in the ordered pairs.

The notation used to indicate the inverse of $f(x)$ is _____.

Important Note: $f^{-1}(x) \neq \frac{1}{f(x)}$

If two functions are inverses of one another, then their composition is _____.

Ex 1:

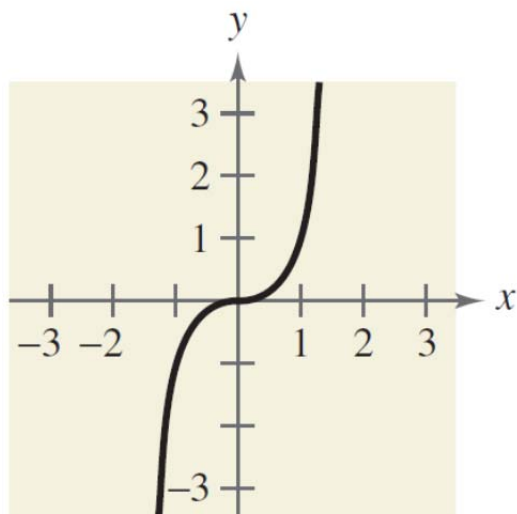
Find the inverse function of f informally. Verify that $f(f^{-1}(x)) = x$ and $f^{-1}(f(x)) = x$.

$$f(x) = \frac{x-1}{5}$$

Inverse functions are reflected over the line _____.

Ex 2:

Draw the inverse of the function below dashed.



Ex 3:

Use the table of values for $y = f(x)$
To complete a table for $y = f^{-1}(x)$.

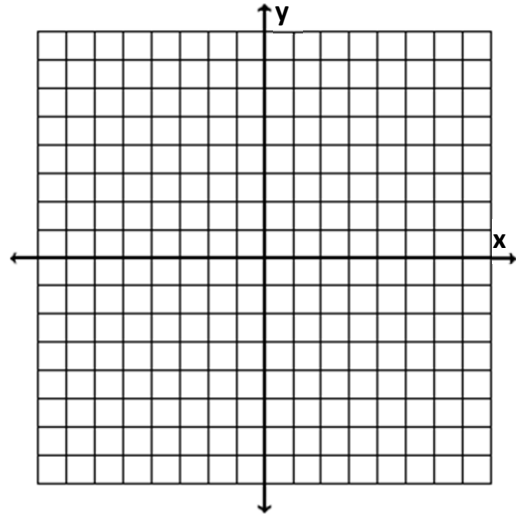
x	-3	-2	-1	0	1	2
$f(x)$	-10	-7	-4	-1	2	5

x						
$f^{-1}(x)$						

Ex 3:

Show that f and g are inverse functions (a) algebraically and (b) graphically.

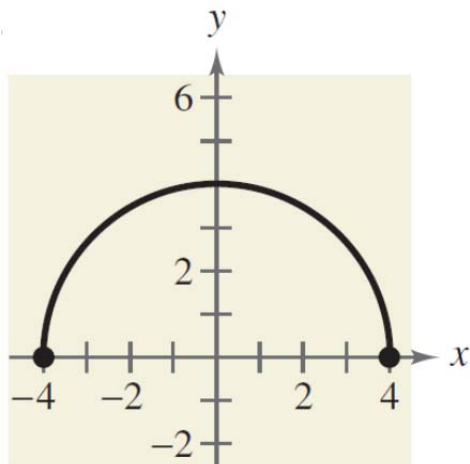
$$f(x) = 2x \qquad g(x) = \frac{x}{2}$$



If a function has an inverse function, then its graph will pass the _____ line test.

Ex 3:

Does the function have an inverse function.

**Ex 4:**

Determine whether the function has an inverse function.

$$g(x) = \frac{1}{x^2}$$

Assignment 1.9

Pg. 99 Vocab #'s 1-5 ALL

Problem Set #'s 1-21 ODD, 25-45 ODD, 55-59 ODD, 65, 69