

Revisiting Inverses

an inverse function interchanges the domain and range
the graphs are also a reflection in the line $y = x$

&

the composition $f(g(x)) = g(f(x)) = x$

The inverse of $y = b^x$ is $x = b^y$
 $x = b^y$ written as a log is $y = \log_b x$

Composition – rewriting y as $f(x)$ and y' as $g(x)$, then merely substituting

If $f(x) = b^x$ and $g(x) = \log_b x$, then

$$f(g(x)) = b^{\log_b x} = x$$

$$b^{\log_b x} = x$$