

## **Inverse of an Exponential**

**The inverse of the exponential equation,  $y = b^x$  is found by interchanging the domain and range, the  $x$  and  $y$ .**

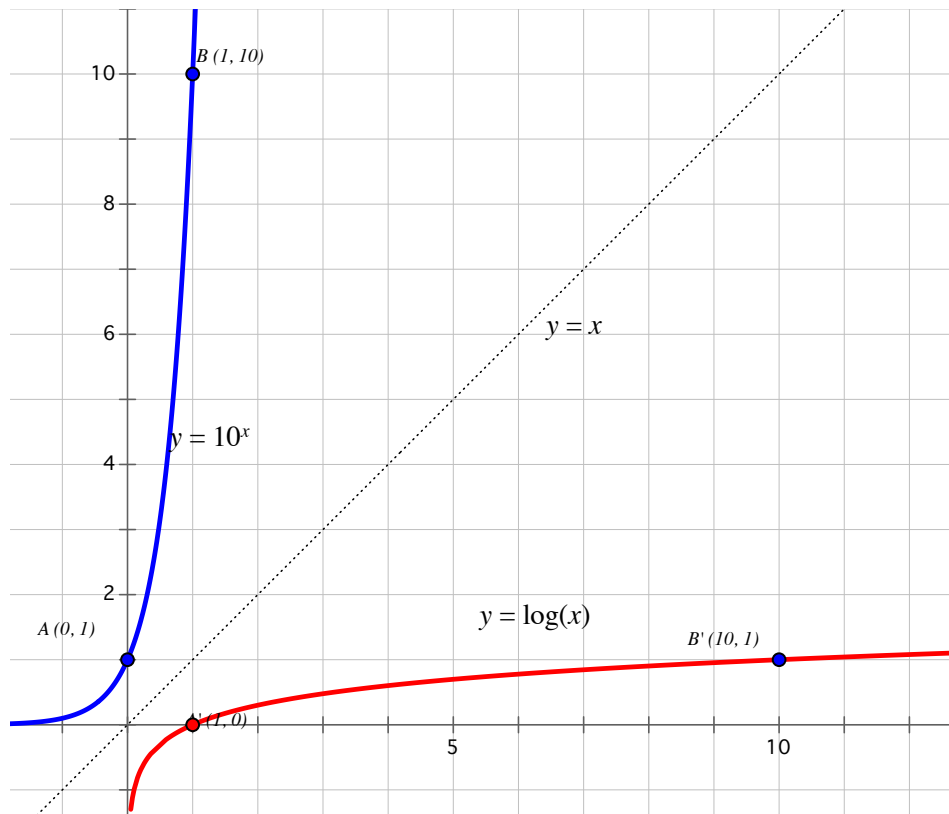
**So, the inverse of  $y = b^x$  is  $x = b^y$  which we now know can be written as**

$$y = \log_b x$$

**or**

$$f^{-1}(x) = \log_b x$$

**So, if we look at the graph of  $y = 10^x$  and interchange the domain and range,  $x$  and  $y$  coordinates, we have the inverse  $x = 10^y$  or  $y = \log_{10} x$**



Let's look at these graphs.  
Notice, I can graph  
 $y = \log_b x$   
by just interchanging  
the x and y coordinates as  
mentioned earlier.  
Notice A and A' and  
B and B'.