**Finding the Inverse of Exponential and Logarithmic Functions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***Finding the Inverse of Logarithms and Exponential Equations***

* Just like when finding the inverse of any type of equation, change the $f(x)$ to a \_\_\_\_\_\_\_\_\_\_\_\_
* Switch the \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_
* Remove any coefficient or constants so that the logarithm is in the form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or the exponential equation is in the form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The inverse of a logarithmic function should always be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the inverse of an exponential function should always be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. **What is the inverse of** $f(x)=4^{x}?$
2. **What is the inverse of** $h(x)=5^{\frac{x}{4}}$**?**
3. **Find** $f^{-1}\left(x\right)$ **for** $f\left(x\right)=2^{x}+1.$
4. **Find the inverse of** $y=\frac{6^{x}}{3}$
5. **Given** $h\left(x\right)=5^{x-4}+3,$ **what is** $h^{-1}\left(x\right)?$
6. **What is** $f^{-1}(x)$ **for** $f(x)=-20log\_{4}x?$
7. **What is the inverse of** $y=log\_{8}\left(x-1\right)-4?$
8. **What is the inverse of** $y=log\left(3x\right)+8?$
9. **Find the inverse of** $y=log\_{4}\left(x+2\right)-3$
10. **What is** $f^{-1}$ **for** $f\left(x\right)=log\_{3}(x^{2})$**?**