**8.0 Review of Logarithms**

**What is the inverse of an Exponential Function?**



$y=2^{x}$

**Logarithmic Function –**

Write the following exponential statements in logarithmic form:

 $5^{4}=625$ $81^{\frac{1}{2}}=9$

Write the following logarithmic statements in exponential form:

 $log\_{3}243=5$ $log\_{2}\frac{1}{8}=-3$

In each case, express the logarithmic equation as an exponential equation and solve for the variable:

 $log\_{4}x=3$ $log\_{64}x=\frac{1}{6}$

 $log\_{b}27=3$ $log\_{b}5=\frac{1}{3}$

 $log\_{2}\left(\frac{1}{4}\right)=y$ $log\_{8}2=y$

**Laws of Logarithms**

Use the laws of logarithms to rewrite the following:

  

Express  as a single logarithm