**Rewriting Exponential Functions as Logarithms**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of each other.

$Exponential function:y=a^{x}$ $Logarithmic Function:y=log\_{a}x$

You can convert exponential functions to logarithmic functions, and vice versa, by doing the following:

 **Convert to exponential form.**

**Ex. 1** Log form**: \_\_\_\_\_\_\_\_\_\_ Ex. 2** Log form**: \_\_\_\_\_\_\_\_\_\_ Ex. 3** Log form**: \_\_\_\_\_\_\_\_\_\_**

Exponential form**: \_\_\_\_\_\_\_\_\_\_** Exponential form**: \_\_\_\_\_\_\_\_\_\_** Exponential form**: \_\_\_\_\_\_\_\_\_\_**

**Convert to logarithmic form.**

**Ex. 4** Expo form**: \_\_\_\_\_\_\_\_\_\_ Ex. 5** Expo form**: \_\_\_\_\_\_\_\_\_\_ Ex. 6** Expo form**: \_\_\_\_\_\_\_\_\_\_**

Logarithmic form: \_\_\_\_\_\_\_\_\_\_ Logarithmic form: \_\_\_\_\_\_\_\_\_\_ Logarithmic form: \_\_\_\_\_\_\_\_\_\_

**What is the exponent of 2 that gives you 32?**

**What is the exponent of 3 that gives you 27?**

**What is the exponent of 4 that gives you 2?**

**What is the exponent of 3 that gives you 0?**

**You try:**