

Exponential Form: $b^y = x$ Logarithmic Form: $\log_b x = y$

$$10^3 = 1000$$

$$\log_{10} 1000 = 3$$

Evaluate

1. $\log_8 2$

2. $\ln \frac{1}{e^3}$

3. $\log \frac{1}{10,000}$

4. $\log_5 1$

Solve for x.

5. $\log x = 4$

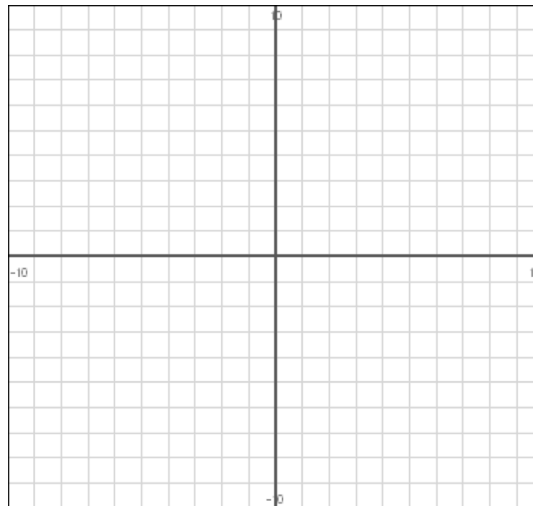
6. $\ln x = \frac{1}{2}$

7. $\log x = -1.2$

6. Consider the logarithmic function $f(x) = \log_{10}x$. Graph it and find its domain and range:

domain: _____

range: _____



7. On the same axes, graph $g(x) = 10^x$. Find its:

domain: _____

range: _____

Decibels are measured using the following formula where I = intensity

$$dB = 10 \log \frac{I}{I_0} \text{ where } I_0 \text{ is a sound that is barely audible.}$$

8. Find the decibel level for a softly played flute, $I = 10^{4.1} I_0$