

Solve for x:  $\log(x) = -3$

Note: There are two strategies for solving logarithmic equations. The first: use the property if  $\log a = \log b$ , then  $a = b$  [a and b both positive]. We cannot use this property because of the term  $-3$ . The second strategy is to rewrite the logarithm as an exponential function. We will use this strategy:

This is a common logarithm with base 10, so rewrite as an exponential function with base 10

$$10^{-3} = x$$

$$X = 1/1,000 \text{ or } .001$$