

Name: _____

Date: _____

Instructions: Please complete the following problems for practice.**Problem 1.** Convert to logarithmic form: $8^2 = 64$ **Problem 2.** Convert to exponential form: $\log_3\left(\frac{1}{9}\right) = -2$ **Problem 3.** Evaluate: $\log_4 \frac{1}{64}$ **Problem 4.** Evaluate: $\ln e$ **Problem 5.** Evaluate: $\log_{\frac{1}{3}} 9$ **Problem 6.** Evaluate: $\log_7 \sqrt{7}$ **Problem 7.** Evaluate: $\log 100$ **Problem 8.** Evaluate: $\log_2(-2)$ **Problem 9.** Fill in the blank: The inverse of the exponential function is the _____.**Problem 10.** What is the domain and range of $y = \log_a x$?**Problem 11.** What is the domain of $f(x) = \log_5(x - 7)$ **Problem 12.** Solve: $\log_5 1 = y$ **Problem 13.** Solve: $\log_5(x + 4) = 2$ **Problem 14.** Write the equation of the graph $y = \ln(x)$ reflected across the x -axis and translated left 2, and up 4.

Graphing Problems:

Problem 15. Graph: $f(x) = \log_{\frac{1}{2}} x$

Problem 16. Graph: $f(x) = -\log_3(x - 1) - 1$