Logarithm Worksheet

Express the equation in exponential form.

1. $\log_5 25 = 2$ 2. $\log_8 2 = 1/3$

Express the equation in logarithmic form.

3. $5^3 = 125$ 4. $8^{-1} = 1/8$

Evaluate the expression.

5. (a) $\log_6 36$ (b) $\log_9 81$ (c) $\log_7 7^{10}$

6. (a) $\log_3 (1/27)$ (b) $\log_{10} \sqrt{10}$ (c) $\log_5 0.2$

7. (a) $2^{\log_2 37}$ (b) $3^{\log_3 8}$ (c) $e^{\ln \sqrt{5}}$

8. (a) $e^{\ln \pi}$ (b) $10^{\log 5}$ (c) $10^{\log 87}$

Use the definition of the logarithmic function to find x.

9. (a) $\log_5 x = 4$ (b) $\log_{10} 0.1 = x$

10. (a) $\log_4 2 = x$ (b) $\log_4 x = 2$

11. (a) $\log_x 1000$ (b) $\log_x 25 = 2$

Use a calculator to evaluate the expression, correct to four decimal places.

12. (a) ln 5 (b) ln 25.3 (c) $\ln(1 + \sqrt{3})$

13. (a) ln 27 (b) ln 7.39 (c) ln 54.6

Find the domain of the function.

14. $f(x) = \log_{10}(x + 3)$ 15. $f(x) = \log_5(8 - 2x)$