Properties of Logarithmic Functions 11-25-07

Page 316 1-38, not 4's

2. $2\ln 3+\ln y$

6. $-2\log_2 x$

10. $3+4\log x$

14. $\log 5x$

18. $\log\sqrt[5]{x}$

22. $\log\left(x^9y^5z^4\right)$

26. 2.2362

30. $\dfrac{\ln x}{\ln 7}$

34. $\dfrac{\log x}{\log 4}$

Properties of Logarithmic Functions 11-25-07

1. Describe the transformation of $g(x) = \ln x$ into the function $f(x) = \log_7 x$. Then sketch the graph.

2. Graph the function $f\left(x\right)=\log_{\frac{1}{3}}(9x)$ and describe the domain, range, continuity, increasing or decreasing behavior, asymptotes, and end behavior.

3. The relationship between light intensity ***I*** of light (in lumens) at a depth of ***x*** feet in Spectacle Lake is given by

$$\log \frac{I}{12} = -0.00143x \text{ .}$$

What is the intensity at a depth of 50 feet?