**1)** Use a calculator to approximate each to the nearest thousandth

**a)** $\ln 6.2$ **b)** $\ln 2.1$ **c)** $\ln e$ **d)** $e^5$

**2)** Expand each logarithm

**a)** $\ln x^2$ **b)** $\ln \sqrt[3]{x}$ **c)** $\ln \frac{u^3}{wv^4}$

**3)** Condense each expression to a single logarithm

**a)** $4 \ln 2$ **b)** $\ln 10 - 5 \ln 7$ **c)** $3 \ln x + 3 \ln y$

**4)** Solve each equation. Round your answer to 4 decimal places if necessary.

**a)** $e^x = 2$ **b)** $e^{-3n} = 83$

**c)** $e^{k+7} = 26$ **d)** $9e^{1.4p-10} - 10 = 17$

**e)** $\ln x = -5$

**f)** $7.316 = e^{\ln(2x)}$

**g)** $\ln(-m) = \ln(m + 10)$

**h)** $\ln(9x + 1) = \ln(x^2 + 9)$

**i)** $\ln(1 - 8x) - 10 = -7$

**j)** $\ln(5 - 2x^2) + \ln 9 = \ln 43$