W8 – The Natural Logarithm
MHF4U

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