

Name: _____

MATH 104

Spring 2023

HW 4: Due 05/04

*"I was lucky because logarithmic plots
are a device of the devil."*

– Charles Richter

Problem 1. (10pt) Showing all your work, evaluate the following:

(a) $\log_{6.831}(1)$

(b) $\log_7\left(\frac{1}{\sqrt{7}}\right)$

(c) $\log_2\left(\frac{2}{\sqrt[3]{2}}\right)$

(d) $\ln(\sqrt[5]{e^8})$

(e) $\ln\left(\ln\left(e^{\sqrt{e}}\right)\right)$

Problem 2. (10pt) Showing all your work, complete the following:

(a) Write the following as a single logarithm:

$$3 \ln(x) - \frac{1}{2} \ln(y) + \ln(z)$$

(b) Write the following in terms of $\log_5 x$, $\log_5 y$, and constants:

$$\log_5 \left(\frac{25x^3}{y^7} \right)$$