

Math 16B: Short Calculus II
Spring 2017, Section 1
Homework Sheet 2
Due: Friday, April 14, 2017

Submit your solutions to the following problems in lecture on the due date above. Present your work in a clean and organized fashion, either on a printed copy of this document (preferred) or a separate sheet of paper. As stated in the syllabus, late submissions will **not** be accepted.

1. Find the derivatives of the following functions.

(a) $f(x) = \frac{\ln(x)}{e^x}$

(b) $f(x) = \ln(x^2(x+1)^3)$.

2. Using properties of logarithms, write the following using only a single logarithm.

$$3(\ln(x+2)) - 4\ln(2x^3) + \ln(x^2+1) + \log_2(x)$$

3. Find the half-life of a radioactive substance for which 99% remains after 1 year.