

LB 118, Sections 003 & 004, Spring 2016
Homework 1 (due 01/20)

Instructions: Please review the section of the course syllabus on homework before writing up your solutions to the problems below. Do not write on or turn in this document. Instead, write your solutions on looseleaf or blank paper. Homework is due at the start of class.

Please read through section 1.1 of the textbook and carefully work through each of the Explore exercises before attempting the problems below.

Don't forget to restate each problem when you write up your solution.

1. Suppose that $B_0 = 100$ (the initial condition) and $B_{t+1} - B_t = 0.1 B_t$ (the dynamic equation).
 - (a) Compute $B_1, B_2, B_3,$ and B_4 .
 - (b) Determine the solution equation for the above dynamic equation and initial condition. Show all of the steps in your calculation.
 - (c) Compute B_{2016} . Hint: Write your answer using scientific notation.
2. Solve Exercise 1.1.4, part (d).
3. Solve Exercise 1.1.5. When you are asked to compare the relative growth rates at different pH values, you should write a few sentences which attempt to explain the significance of this comparison. What do you hypothesize based on this comparison?
4. Solve Exercise 1.1.6.