

Math 413, Fall 2010
Homework 4. Due Monday 11/08/10

Part I.

Do the following problems from Holmes textbook: 3.2, 3.8, 3.15

Part II.

(a) For the bimolecular reaction $X + Y \xrightarrow{k} Z$ show that the concentration $x = x(t)$ of X satisfies the logistic equation.

(b) Consider the reversible reaction $A \rightleftharpoons B$, where k_1 and k_{-1} are the rate constants for the forward and backward reactions, respectively. If $a(0) = a_0$ and $b(0) = b_0$, find the concentration $a = a(t)$.