

Due date: October 8, 2008 (Wednesday), before class

- 1) Problem 7.2 on page 213.
- 2) Consider Example 7.4 (Stream ecology monitoring) on page 196. It's about counts of insects in each of c different classes at a particular site. Set $c = 3$, $\alpha_1 = 3$, $\alpha_2 = \alpha_3 = 1$, and $\lambda = 50$.
 - (a) Use Gibbs sampler described in Example 7.4 to simulate Markov Chain iterations based on the joint distribution of $\{N, Y_1, Y_2, Y_3, P_1, P_2, P_3\}$. Describe your algorithm in details first.
 - (b) Plot the sample paths for N, Y_1, Y_2, P_1, P_2 respectively. Make comments on your plots.
 - (c) List summary statistics of N, Y_1, Y_2, P_1, P_2 respectively. Report any finding based the summary statistics. You may wish to remove iterations as burn-in period.