Homework 8 (due 11/07)

1. Chapter 7 ex 7.6
2. Chapter 8 ex 8.3
   [for a. use the diagnostic criteria seen in class instead of calculating the ESS]

Homework 9 (due 11/14)

1. Chapter 9 ex 9.1
2. Chapter 9 ex 9.3

Homework 10 (due 11/26)

1. Chapter 9 ex 9.2
2. Problem on Poisson Regression: Sub-Saharan Africa has experienced a high proportion of regime changes due to military takeover of governments for a variety of reasons. We intend to use the data to explain military coups. The variables are:

   MILTICOUPL: n. of coups
   MILITARY: n. of years of military oligarchy
   POLLIB: (0 =no civil rights, 1 =limited, 2=extensive)
   PARTY93: n. of political parties
   PCTVOTE: % legislative voting
   PCTTURN: % registered voting
   SIZE: of country (1000 km2)
   POP: (in millions)
   NUMREGIM: Number of regimes
   NUMELEC: Number of elections

   a) An appropriate model is the Poisson regression model. Write down the model and the likelihood function.
b) Run a standard GLM on the data and get the estimated mean and variance of the parameters.

c) Use normal candidate densities with mean and variance at the GLM estimates in the Metropolis-Hastings algorithm. Implement the algorithm and run it. Adjust your proposal density to get a reasonable acceptance rate.

d) Plot traces and diagnostic ACF plots to assess convergence.

e) Plot the posterior densities of the regression parameters and compare those to the prior densities.