Week 5 Homework

1. Suppose you have an MCMC method to generate draws with invariant distribution equal to the posterior of θ. You wish to estimate $\delta = E_\pi\left[h(\theta)\right]$. Two possible ways to estimate δ using the draws $\left\{\theta^1,\ldots,\theta^R\right\}$ are

   a. $\hat{\delta} = \frac{1}{R}\sum h\left(\theta^r\right)$

   b. $\tilde{\delta} = h\left(\frac{1}{R}\sum \theta^r\right)$

   explain why suggestion "b" is incorrect.

2. `rmnlIndepMetrop` implements the independence Metropolis for the MNL model. Rewrite this routine to implement a RW Metropolis for the MNL. Simulate data from the MNL model and test your RW method against `rmnlIndepMetrop`. Experiment with scaling the RW and also with different initial values.