Homework 3 (Due on Oct 7)

Problem I

Show the equivalence of Escober & West, 1995 and Bush & Maceachern, 1996 Gibbs samplers.

Problem II

1. Simulate data from the following mixture of normals as $y_i \sim 0.1N(-1, 0.2) + 0.5N(0, 1) + 0.4N(1, 0.4)$, $i = 1, \ldots, 100$

2. Run the improved version of collapsed Gibbs sampler by Bush & Maceachern; 1996, with $\mu_0 = 0, \kappa = \alpha_\tau = b_\tau = \alpha = 1$.

3. Obtain posterior estimates of the number of clusters and the clustering configuration both using Dahl, 2006 and Zhang et al 2014+.

4. Compare the resulting estimates.