STAT 706 Homework 7 SPRING 2019

Due on Tuesday April 9 at the beginning of lecture. Note: R stands for exercises in Rosenthal's book.

- 1. R 8.3.1
- 2. R 8.5.3
- 3. R 8.5.4
- 4. R 8.5.6
- 5. R 8.5.13
- 6. Given a Markov chain on a *finite* state space S with transition probability matrix $P = \{p_{i,j}\}_{i,j \in S}$.
 - (a) Prove that at least 1 state must be positive recurrent.
 - (b) Prove that P always has 1 as an eigenvalue.