

Homework 5 (STA 3021)

Reading: Chapter 4.3, 4.4

1. Do a complete classification of states, that is, identify communicating classes, periodic/apperiodic, positive/null recurrent or transient.

(a)

$$P_1 = \begin{pmatrix} .5 & .5 & 0 \\ 0 & .5 & .5 \\ 0 & 0 & 1 \end{pmatrix}.$$

(b)

$$P_2 = \begin{pmatrix} .2 & .8 & 0 & 0 \\ .6 & .4 & 0 & 0 \\ .2 & .3 & .5 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}.$$

2. Chapter 4 Exercise 14. Also, do a complete classification of states, that is, identify communicating classes, periodic/apperiodic, positive/null recurrent or transient.
3. Chapter 4 Exercise #18
4. Chapter 4 Exercise #23
5. Chapter 4 Exercise #28
6. Chapter 4 Exercise #29
7. Chapter 4 Exercise #36