MTH 371: Assignment II

November 13, 2019

Instructions

- Use statistical software R for your codes.
- Only basic built-in functions available in R are allowed.
- Due date is November 30, 2019 (11.59 p.m. IST). No late assignments will be accepted.
- Submit all of your work which include the codes, results, graphs and reports.

1. (5 Marks) Let there be a discrete time Markov chain with the state space $S = \{0, 1, 2\}$. The one step transition probability is given by

$$P = \begin{bmatrix} 0.7 & 0.2 & \\ 0.4 & & 0 \\ 0 & 1 & 0 \end{bmatrix}$$

It is given that when the process starts the MC was in state 1. Answer the following.

(a) Find the missing probabilities.

(b) What will be P^{10}, P^{20}, P^{50}. What do you observe.