IME625: Stochastic Processes

2021-22 Sem-II

Homework-15

We have completed our study of long-run behaviour of CBs. It's time to put things together. Consider the Markov Chain to the right. Obtain its long-run fractions and limiting probabilities for all possible starting states. When does the limiting probabilities constitute limiting distribution? Try to write down the steps like an algorithm.

p_{ij}	1	2	3	4	5	6	7	8	9
1	2/3	1/3	0	0	0	0	0	0	0
2	1/4	3/4	0	0	0	0	0	0	0
3	0	1/3	0	0	0	1/3	0	0	1/3
4	0	0	0	0	1/2	0	0	1/2	0
5	0	0	0	1/3	0	0	2/3	0	0
6	0	0	1/4	1/4	0	1/4	1/4	0	0
7	0	0	0	0	3/4	0	0	1/4	0
8	0	0	0	1/2	0	0	1/2	0	0
9	0	0	0	0	0	0	0	0	1