

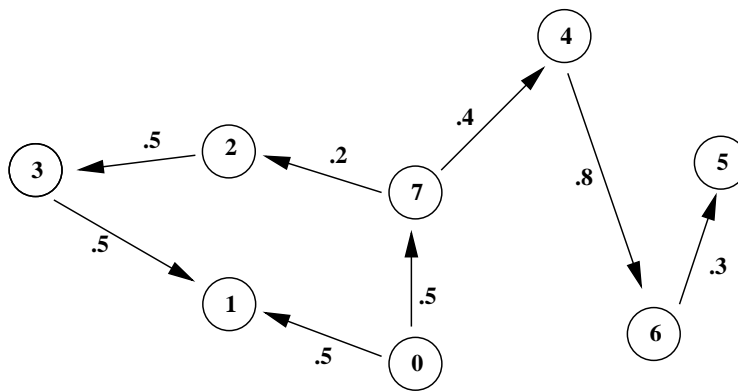
Homework 8

Due in class Wednesday November 30th

Problem 1

Problem 8.0.14 from the lecture notes.

Problem 2



- What are the recurrent classes of this Markov chain ?
- For each recurrent class determine the stationary distribution (or prove they do not exist).
- What is the probability we eventually hit state 5 starting in state 0?
- What is the expected number of steps until we hit state 5?

Problem 3

Consider the graph G with vertices $\{1, 2, 3, 4\}$ and edges $\{12, 21, 23, 32, 34, 43, 14, 41, 24, 42\}$. For each vertex, let the probability of moving from vertex v to any other vertex be $1/d(v)$ ($d(v)$ = number of edges starting at v). What is the stationary distribution of this chain?