

IEOR 6711: Stochastic Models I

Fall 2012, Professor Whitt

Homework Assignment 9, Tuesday, October 30

Chapter 4: Markov Chains

Due on Thursday, Nov. 8. (No class on Tuesday, November 6 because Election Day.)

Problems from Chapter 4 of *Stochastic Processes*, second edition, by Sheldon Ross.

You only need turn in the problems without answers in the back.

Problem 4.1

Problem 4.2

Problem 4.3

Problem 4.4

Problem 4.5

Problem 4.7

Problem 4.8

Problem 4.10 (answer in back)

Problem 4.11

Problem 4.12 (Hint: Under the ergodicity condition [p. 177], the limiting probabilities coincide with the stationary vector, the vector π such that $\pi = \pi P$. Recall that the elements of the vector πP are defined by

$$(\pi P)_j \equiv \sum_{i=1}^{i=n} \pi_i P_{i,j} .$$

Problem 4.13 (answer in back)

Problem 4.14 (answer in back)