IEOR 4701: Stochastic Models in Financial Engineering

Summer 2007, Professor Whitt

Homework Assignment 3: Monday, July 16, 2007

Introduction to Discrete-Time Markov Chains

Due on Wednesday, July 18 before class (10:00am); to be discussed at the recitation on Tuesday evening, July 17, 7:30-9:00pm in 633 Mudd.

Read Sections 4.1-4.5 in the Ross text, up to (but not including) Section 4.5.2 pages 185-221. However, to keep the work under control, Examples 4.15, 4.16, 4.20, 4.21 and 4.22 are optional. That cuts the reading almost in half.

Do the following exercises at the end of Chapter 4:

2. (Hint: Look at Example 4.4.)

3.

7.

14.

18. In this exercise we keep flipping coins, switching back and forth between the two coins in the manner indicated.

19.

20.

30.

It is always good to get additional practice by doing additional examples. That can be done by choosing problems with answers in the back. I especially recommend problems: 1, 4, 21 and 27. For 27, use symmetry to simplify the equations that need to be solved.

NOTE: Recall that there also is a numerical homework being assigned today, which is due on Wednesday, July 25.