IEOR 3106: Introduction to Operations Research: Stochastic Models

Fall 2012, Professor Whitt

Homework Assignment 10: Tuesday, November 20.

Due on Thursday, November 29. (so not to be due immediately after Thanksgiving)

Chapter 7: More Renewal Theory

In Ross, read Examples 7.15 and 7.16 in Section 7.4. Read Sections 7.5-7.7, skipping Examples 7.19 and 7.24. (The total required reading is approximately 12 pages.)

Key Concepts in this Part of the Assignment:

renewal reward process (Section 7.4)
age of a renewal process (Examples 7.15 and 7.22)
excess of a renewal process (Examples 7.16 and 7.23)
regenerative process (Section 7.5)
alternating renewal process (Section 7.5.1)
semi-Markov process (Section 7.6)
the inspection paradox (Section 7.7)

Do the following exercises at the end of Chapter 7. You need not turn in the ones with answers at the back.

26. Hint: Look at Section 7.4.

31.

32.

38.

41. Hint: Look at Example 7.22 and the equilibrium distribution F_e, defined after Example 7.23 (also see the next exercise).

42. (answer in back)

49. (answer in back)

51. Hint: Look at Section 7.7.