Homework 2

Ma623 Stochastic Processes

due Tuesday Feb 23 2010

These are problems from the Chapter 8 Poisson Process given in class. Please solve the following problems:

(1) Let X_t be a homogeneous (regular) Poisson process with rate λ. Determine the covariance between X_t and X_{t+h} where $t, h > 0$. That is calculate:

$$\mathbf{E}\Big[\,(X_t - \mathbf{E}[X_t])\,(X_{t+h} - \mathbf{E}[X_{t+h}])\,\Big]$$

(2) Problem 8.7 from the notes

(3) Problem 8.5 from the notes

(4) Problem 8.6 from the notes

(5) Problem 8.9 from the notes

Simulation exercises: Problems 8.8 and 8.11 from the notes.

Bonus Problem: Problem 8.13

In addition, any problem not mentioned in this assignment and left as an exercise in the class will count as bonus points.