18.440 Probability and Random Variables
Spring 2009

18.440 problem set 8

Problems 1-4 from Ross are from the 7th or 8th Ed.

1. Chap. 7, Problem 9 or 7.9.

2. Chap. 7, Problem 13 or 7.13. Extra credit part: is it possible from the given information to evaluate or approximate the variance of the same random variable? If so, do it. If not, explain why not.

3. Chap. 7, Problem 19 or 7.19.

4. Chap. 7, Problem 39 or 7.39. Also find the correlation of Y_n and Y_{n+j}.

5. Let X and Y be independent with variances $\sigma^2 > 0$ and $\tau^2 > 0$ respectively.
(a) Find the covariance of $X + Y$ and $X - Y$.
(b) Find the correlation of the same variables.