

MA 485-1E (Probability Theory), Dr. Chernov
Due Mon, Nov 10

Assignment #11

Chapter IX. Problems 9.2.2, 9.3.3 (Hint: the pieces have lengths X and $1 - X$), 9.3.6*.

Chapter X. Problems 10.2.10.

Two more problems:

11-A. Suppose X and Y are two independent random variables uniformly distributed on the interval $(0, 1)$. Let $V = X^2 + Y^2$ and $W = XY$. Find $\text{Cov}(V, W)$.

11-B. A random variable X takes values $-2, -1, 0, 1, 2$ with probability $1/5$ each. Find $\text{Cov}(X, X^2)$. Are X and X^2 independent?

The starred problems are for extra credit. Each problem is graded on the base of “4 points max”.

Note: the average on the second midterm test was 84 points out of 100.