553.633/433

Homework #1

Due Wed. 9/5/18

There are four problems (A, B, and two from the textbook):

A. Suppose that a random variable X has a symmetric triangular probability density function over the interval [−1, 1] (i.e., with x the dummy variable for the density function, the density is $1 - |x|$ for $x \in [-1, 1]$ and 0 for $x \notin [-1, 1]$). What is var(X) (the variance of X)? (Show the derivation, not just the answer.)

B. Exercise 2 in week 1 handout (file MonteCarlo_intro_handout.pdf, corresponding to slides shown in class). Your example should be different than any shown in the course lecture or section on Tuesday. It can be a real-world-type problem or a "textbook" (analytical) problem.

Exercise from the textbook:

1.2

1.5