18.175 PROBLEM SET FOUR

A. Read and understand Sections 3.5, 3.6, 3.7, 3.8, 3.9, 4.1 and A.5 of Durrett (or another text covering the same material). Write a few sentences of notes about your reading. (Hand them in, but they won't be graded. This is just to give you an excuse to take some notes.)

B. COMPLETE THE FOLLOWING PROBLEMS FROM DURRETT:

$$3.6.7, 3.6.13, 3.7.6, 3.7.7, 3.8.3, 3.8.4, 3.9.6, 3.9.8$$

C. Write up a proof of the version of Cramer's theorem (the large deviation principle for empirical averages) stated in the lecture slides for Lecture 13. (The proof is sketched in the slides, but you will need to fill in some details for both the upper bound and the lower bound. It is okay if you want to consult an outside source for this proof, as long as you cite the source you use.)

18.175 Theory of Probability

Spring 2014