Assignment 8

Due Wednesday, March 31.

Exercises: (P = Problems, TE = Theoretical Exercises)

Chapter 5: P 23*, 27, 29, 40, 41*
           TE 12, 20, 28*, 29

Chapter 6: P 1(a)*, (b), (c), 6*

**NOTE EXTRA PROBLEM 8.A BELOW. IT IS TO BE TURNED IN.**

8.A* Let $X$ be a random variable having gamma distribution with parameters $(\alpha, \lambda)$, and let $Y = KX$ for some positive constant $K$. Show that $Y$ also has gamma distribution, and identify the parameters of this distribution.

Hints and instructions:

P 23, 27, 29. Use the normal approximation to the binomial distribution, with the half-integer (continuity) correction. In 29, note that if a stock has initial price $s$, and the price goes up $X$ times in $n$ time periods, then the final price is $u^X d^{n-X} s$.

P 40, 41, TE 28, 29. I suggest that you do not use Theorem 7.1 to do these problems. Rather, go through the procedure outlined in Section 7 and in class: find the cumulative distribution function of the random variable of interest, then differentiate it to obtain the density.