Homework Assignment No.4, Due Tuesday Oct. 1 at 5 pm

1. In Problem 2 of the last assignment, we used a 5-step binomial tree to price a call option, with the up and down move sizes corresponding to a normal model. Here we implement a similar 4-step log-normal model, with up and down moves characterized by factors $\exp(\pm\sigma\sqrt{\Delta t})$, where σ is the volatility of the underlying stock, $\Delta t = T/N$ and T is the time to expiration (in years) and N is the number of steps. Assuming a riskless interest rate (annualized) $r = 5\%$, use this 4-step binomial tree to price a call option struck at 100 on the stock that has a 10% volatility, when the current stock price is 100. Repeat the calculation for a current stock price 105.

2. Problem 3.10 from the text. Compare with the results from Problem 1.