MATH 194: HOMEWORK 3: Due January 30, 2001

1. Consider a CRR model with $T = 2$, $S_0 = \$50$, $S_1 = \$100$ or $S_1 = \$25$ (the same model as in Exercise 2 of last week's homework). Now consider an American put option with strike price $K = \$40$. Assume that the risk free interest rate is $r = 0.1$. Use a binary tree to compute the arbitrage free price of the American put option at time zero.

2. Use an Excel spreadsheet (following the "Computing American option trees" handout) to find the initial arbitrage free price for an American put based on a CRR model with $T = 5$, $S_0 = \$125$, $u = 1.3$, $d = 0.96$, $r = 0.06$, where the strike price is $K = \$120$.