Homework 4:

1. Exercise 4.2
2. Exercise 4.3
3. For a BAPM with $S_0 = 60$, $u = 1.05$, $d = .95$, $r = .01$, and $N = 3$
   (a) determine the value at time 0 of an American style option with intrinsic value of
   $$\max_{0 \le i \le n} S_i - S_n$$
   for $n = 0, 1, 2, 3$.
   (b) Express the replicating strategy that the seller could use to protect against any risk.
   (c) What would be the optimal stopping time that would make the discounted value of this process a martingale?