

## Math 194, Winter 2008

### Homework 8 — Due Friday, March 14, 2008

**1.** In this exercise we use the set-up of Exercise 2, Section 3.7 (page 52–53 of the text). Consult the solution of Exercise 3 on Homework 7 for a description of an Equivalent Martingale Measure  $\mathbf{P}^*$ .

(a) Use  $\mathbf{P}^*$  to compute the time  $t$  price  $C_t$  of the European call option with payoff  $(S_2^1 - 6)^+$  for  $t = 0, 1$ .

(b) Now use  $\mathbf{P}^*$  to compute the time  $t$  price  $P_t$  of the European put option with payoff  $(6 - S_2^1)^+$  for  $t = 0, 1$ .

(c) Confirm the call-put parity relationship  $C_t - P_t = S_t - 6$  for  $t = 0, 1$ .

**2.** In this exercise we also use the set-up of Exercise 2, Section 3.7 (page 52–53 of the text). In Homework 7 you saw that this model admits an Equivalent Martingale Measure. This market is therefore *viable*, by the First Fundamental Theorem of Asset Pricing. Is this market complete?

**3.** Exercise 3, Section 3.7 (page 53 of the text).