1. (20 points). Suppose that the nine-year yield is 1.7 percent and the ten-year yield is 1.8 percent. If the expectations hypothesis of the term structure is correct (in the sense that yields are average expected one-year yields over the life of the bond), what is the expected one-year yield in 9 years’ time?

(a) What are these two interest rates? Which is higher, and why?
(b) The article says that mortgage rates are closing in on multi-year lows. Why are these rates so low?

3. (10 points). What is the disadvantage of a mortgage with no prepayment penalty, from the perspective of the lender?

4. (10 points). What is an Alt-A or Alternative-A mortgage? Note that we did not do this in class. Are Alt-A mortgages eligible for purchase by Fannie Mae?

5. (20 points). Suppose that 100 bonds are bundled into a Collateralized Debt Obligation (CDO). Each bond has a maturity value of $1 million and pays no interest. The CDO is bundled into three tranches: a senior tranche which promises $80 million, a mezzanine tranche that promises $10 million and a junior tranche that promises $10 million. At maturity, 70 bonds pay out in full and the other 30 default. The recovery rate on the defaulted bonds is 50 percent. How much money do the holders of the senior tranche receive? How much money do the holders of the mezzanine tranche receive? How much money do the holders of the junior tranche receive?

6. (20 points). Suppose that you buy a stock on margin. The stock price is $100 and you buy 1,000 shares, borrowing $50,000 and contributing $50,000 of your own money. Maintenance margin is 25 percent.
(a) At what price will you first receive a margin call?
(b) If the price of the stock falls to $60, how much extra margin must you post?