In-class quiz 3

1. Which of the following $5,000 face-value securities has the highest yield to maturity?
   A) A 6 percent coupon bond selling for $5,000
   B) A 6 percent coupon bond selling for $5,500
   C) A 10 percent coupon bond selling for $5,000
   D) A 12 percent coupon bond selling for $4,500

2. If you expect the inflation rate to be 15 percent next year and a one-year bond has a yield to maturity of 7 percent, then the real interest rate on this bond is
   A) 7 percent.
   B) 22 percent.
   C) -15 percent.
   D) -8 percent.

3. You purchased a two-year maturity coupon bond with a face value of $1000 and coupon rate is 10%. Your purchase price is $1000.
   (a) What is the yield to maturity on this bond?
   (b) Had the price been $950, will the yield to maturity be higher than 10% or lower than 10%.
   (c) One year later, after you received your coupon payment, you have to sell this bond to meet some pressing personal needs. The market interest rate meanwhile has risen to 15%. What is the price at which this bond will sell then? What will be your rate of return if you sell it after one year?

Answer:
   (a) If bond’s price equals its face value its yield to maturity equals its coupon rate.

   Therefore the answer is 10%. Or solve 1000 = \frac{100}{(1+i)} + \frac{1000+100}{(1+i)^2} for i, i =0.1

   (b) If the price is below the face value, the yield to maturity must be above the coupon rate. Or solve 950 = \frac{100}{(1+i)} + \frac{1000+100}{(1+i)^2}, higher

   (c) After one year only one cash flow of 1100 remains, which includes one coupon payment and a final face value payment. Its present value is

   P = \frac{1100}{1.15} = 956.5

   Then the rate of return is (100+956-1000)/1000 = 0.056 or 5.6%.