The student will write python code to answer the following bond questions. Not only does this exercise reinforce earlier financial practices, but gives the student a chance to practice mathematical and string python coding skills.

1. Staind, Inc., has 6 percent coupon bonds on the market that have 14 years left to maturity. The bonds make annual payments. If the YTM on these bonds is 10 percent, what is the current bond price? Assume a par value of $1,000.

2. Ackerman Co. has 9 percent coupon bonds on the market with fourteen years left to maturity. The bonds make annual payments. If the bond currently sells for $850.46, what is its YTM? Assume a par value of $1,000.

3. Kiss the Sky Enterprises has bonds on the market making annual payments, with 6 years to maturity, and selling for $970. At this price, the bonds yield 9.9 percent. What must the coupon rate be on the bonds?

4. Grohl Co. issued 17-year bonds a year ago at a coupon rate of 8 percent. The bonds make semiannual payments. If the YTM on these bonds is 12 percent, what is the current bond price?

5. Ngata Corp. issued 19-year bonds 2 years ago at a coupon rate of 9.4 percent. The bonds make semiannual payments. If these bonds currently sell for 102 percent of par value, what is the YTM?

6. Ashes Divide Corporation has bonds on the market with 17 years to maturity, a YTM of 11.0 percent, and a current price of $1,236.50. The bonds make semiannual payments. What must the coupon rate be on these bonds? **(Do not round your Intermediate calculations.)**

7. Suppose the real rate is 5.5 percent and the inflation rate is 2 percent, what rate would you expect to see on a Treasury bill?

8. An investment offers a 13.0 percent total return over the coming year, Bill Bernanke thinks the total real return on this investment will be only 6.5 percent. What does Bill believe the inflation rate will be over the next year?

9. Say you own an asset that had a total return last year of 9.5 percent. If the inflation rate last year was 5 percent, what was your real return?

10. Both Bond Sam and Bond Dave have 6 percent coupons, make semiannual payments, and are priced at par value. Bond Sam has 3 years to maturity, whereas Bond Dave has 18 years to maturity. **(Do not round your intermediate calculations.)**
    a) If interest rates suddenly rise by 4 percent, what is the percentage change in the price of Bond Sam?

b) If interest rates suddenly rise by 4 percent, what is the percentage change in the price of Bond Dave?
c) If interest rates suddenly fall by 4 percent, what is the percentage change in the price of Bond Sam be then?
d) If interest rates suddenly fall by 4 percent, what is the percentage change in the price of Bond Dave be then?