Problem set 1:
Fixed Income Analysis

Problem 1

Consider a bond with the following payment structure:

days to coupon	coupon + principal	d(t)
161	2.5	0.997799697
342	2.5	0.990697027
522	2.5	0.981639037
705	102.5	0.973412937

I recommend you solve these problems by creating a small excel spreadsheet.

a) Compute the present value of the bond's cash flows at 5%, 4% and 2% discount rates.

b) Find the value of the 5% semi annual bond using the discount function values given in the table.

c) Find the yield-to-maturity of the bond. Hint: You can use trial and error, or the solver in excel.

Problem 2

a) On Jan 1st, 1990 you buy a zero coupon bond with 30 year maturity and a YTM of 9%. You sell it on Jan 1st, 2005 when it has a YTM of 5%. What is your average annual rate of return?

b) The buyer of the bond in a) you sell on Jan 1st, 2005 decides to sell it the day after he acquired it. The YTM is now 5.1%. What is his gain/loss?

c) Answer question b) again assuming that the buyer had bought a zero coupon with 5 (instead of 15) years to maturity.

Problem 3

a) Go to the Bloomberg terminal and find the clean and dirty price on the most recently issued 30 year Treasury bond. What is the accrued interest?

b) You're looking to invest 10M in the above bond. What is the face amount you buy?