LSE Summer School
FM250 – Finance

Classwork 2: Bonds

Question 1
(a) Interest rate on a bond is determined by its coupon rate. True or false? Why?

(b) A bond price tends to rise when interest rate falls. True or false? Why?

(c) If there are two bonds with different maturities, the one with a longer maturity has a higher price sensitivity to interest rate changes. True or false? Why?

Question 2
The following is a list of prices for zero-coupon bonds of various maturities. The face value is $1000.

Maturity (years)	Price of bond ($)
1	943.40
2	898.47
3	847.62
4	792.16

Calculate the yields to maturity of each bond. What is the shape of the yield curve?
Use the given information to compute the price of a 4-year bond with a 4% coupon and the face value of $1000.

Question 3
Consider the following estimates of spot rates:

Year	Spot Rate
1	5.00%
2	5.40%
3	5.70%
4	5.90%
5	6.00%

What can you deduce about the one-year spot interest rate in four years if
(a) The expectations theory of term structure is right?
(b) The liquidity-preference theory of term structure is right?
(c) The term structure contains an inflation uncertainty premium?

Question 4
The formula for the duration of a perpetual bond which makes an equal payment each year in perpetuity is (1+yield)/yield.

If bonds yield 5%, which has the longer duration – a perpetual bond or a 15-year zero-coupon bond? What if the yield is 10%?