1) A market has the following limit orders standing on its book for a particular stock:

Buyer	Bid Size (Number of Shares)	Limit Price (£)	Offer Size (Number of Shares)	Seller
Keith	1,000	19.70		
Paul	200	19.84		
Ann	400	19.89		
Mary	300	20.02		
		20.03	800	Jack
		20.11	1,100	Margaret
		20.16	400	Jeff

Greg submits a limit sell order at £19.83 for 1,000 shares. Assuming that no more orders are submitted after Greg's order, what would be Greg's average trade price?

2) Dee Trader opens a brokerage account and purchases 300 shares of Internet Dreams at $42 per share. She borrows $4,500 from her broker to help pay for the purchase. The interest rate on the loan is 9%.

a. What is the margin in Dee's account when she first purchases the stock?

b. If the share price falls to $30 per share by the end of the year, what is the remaining margin in her account? If the maintenance margin requirement is 30%, will she receive a margin call? Don't ignore the interest rate on the loan.

c. What is the rate of return on her investment?

3) An investor purchased 350 shares of a company at $40 per share. The stock was bought on 70 percent margin (30 percent of the purchase amount was borrowed). One month later, the investor had to pay interest on the amount borrowed at a rate of 2.5 percent per month. At that time, the investor received a dividend of $0.40 per share. Immediately after receiving the dividend, he sold the shares at $36 per share. The investor paid total commissions of $50 on the initial purchase and $45 on the final sale of the stock. What was the rate of return on this investment for the one-month period?

(Hint: The rate of return is equal to the percentage difference between how much the investor had to invest at the beginning while purchasing the stock and how much the investor has made while selling the stock. Do not forget the impact of dividends, commissions and interest on the borrowed amount)

4) An analyst gathers the following information about three securities. What are the price-weighted, value-weighted and equal-weighted returns of an index that is comprised of these three securities?

	Beginning of Period		End of Period	
Security	Price (€)	Shares	Price (€)	Shares
A	20.00	300	22.00	300
B	50.00	300	48.00	300
C	26.00	2,000	30.00	2,000

5) Do the following embedded options benefit the issuer or the bondholder? Explain.

i) A cap on a floating-rate bond
ii) A conversion provision
iii) A put provision

6) Consider the following statements. Are these statements true or false? Explain.

Statement 1: "Callable bonds are more likely to be called if interest rates have increased since the issuance of the bonds."

Statement 2: "When trading bonds with coupons, the bond seller must pay a portion of the next coupon, representing accrued interest, to the bond buyer."

7) Assuming annual interest payments and a principal value of $100, what is the value of a 5-year 6.2% coupon bond when the discount rate is i) 4.5%, ii) 6.2%, and iii) 7.3%? Show that your results are consistent with the relationship between the coupon rate, discount rate, and price relative to par value.

8) A 6-year 5.9% annual coupon bond is selling to yield 7%. The bond pays interest annually. The par value of the bond is $100.

a. What is the price of the 6-year 5.9% coupon bond selling to yield 7%?

b. What is the price of this bond one year later assuming the yield is unchanged at 7%?

c. Suppose that one year later the yield of the bond decreases to 6.1%. What is the price change attributable to moving to maturity assuming no change in the discount rate? What is the price change attributable to a decrease in the discount rate from 7% to 6.1%? What is the total price change?

9) Suppose that a bond is purchased between coupon periods. The days between the settlement date and the next coupon period are 100. There are 182 days in the coupon period. Suppose that the bond purchased has a coupon rate of 7.2% and there are 8 semiannual coupon payments remaining. The par value of the bond is $100.

a. What is the full price for this bond if a 5.8% annual discount rate is used?

b. What is the accrued interest for this bond?

c. What is the clean price of the bond?

10) a. Suppose a 7.4% semi-annual coupon 10-year Treasury issue with a par value of $100 issue is priced in the market based on the on-the-run 10-year Treasury yield. Assume further that this yield is 5.86%, so that each cash flow is discounted at 5.86% divided by 2. What is the market price of the Treasury issue based on this assumption?

b. Suppose also that the price of the same Treasury issue would be $110.3324 if it is calculated based on the prevailing Treasury spot rate curve. What action would a dealer take and what would the arbitrage profit be? Can this situation persist in the long run?

11) a. Suppose an investor can purchase a 5-year 10% coupon bond with a par value of $100 that pays interest semi-annually. The yield to maturity for this bond is 8% on a bond-equivalent basis. What is the total future dollars and the total dollar return that should be generated from this bond if it is to yield 8%?

b. What is the coupon interest, capital gain/loss and reinvestment income associated with this bond? Assume that the reinvestment rate is equal to the yield to maturity.

12) Suppose that a 8% semi-annual coupon bond with a time to maturity of 12 years and a par value of $100 has a price of $108.0292. This bond is first callable in 6 years at a redemption price of $106. What is the yield to maturity for this bond? What is the yield to first call for this bond? You will need to use Excel for this problem.

13) Suppose that the annual yield to maturity for the 6-month and 1-year Treasury bill is 4.6% and 5.0%, respectively. These yields represent the 6-month and 1-year spot rates. Also assume the following Treasury yield curve (i.e., the price for each issue is $100) has been estimated for 6-month periods out to a maturity of 3 years:

Years to Maturity	Annual Yield to Maturity (BEY)
1.5	5.4%
2.0	5.8%
2.5	6.4%
3.0	7.0%

a) Compute the 1.5-year, 2-year, 2.5-year, and 3-year spot rates on a bond equivalent yield basis.

b) Given these spot rates, compute the arbitrage-free value of a 3-year Treasury security that pays semi-annual coupons with a coupon rate of 8%.

14) Assume the following Treasury spot rates and compute the following forward rates on an annualized bond equivalent yield basis:

a) the 6-month forward rate three years from now
b) the 2-year forward rate one year from now

Period	Years to Maturity	Spot Rate
1	0.5	5.0%
2	1.0	5.4%
3	1.5	5.8%
4	2.0	6.4%
5	2.5	7.0%
6	3.0	7.2%
7	3.5	7.4%
8	4.0	7.8%