Book: Investment (used at Econ 233)

1 Chapter 15 - Question 12

Below is a list of prices for zero-coupon bonds of various maturities.

Maturity (Years)	Price of $1,000 Par Bond (Zero-Coupon)
1	$943.40
2	$873.52
3	$816.37

a. An 8.5% coupon $1,000 par bond pays an annual coupon and will mature in 3 years. What should the yield to maturity on the bond be?

b. If at the end of the first year the yield curve flattens out at 8%, what will be the 1-year holding-period return on the coupon bond?

2 Chapter 15 - Question 13

Prices of zero-coupon bonds reveal the following pattern of forward rates:

Year	Forward Rate
1	5%
2	7%
3	8%

In addition to the zero-coupon bond, investors also may purchase a 3-year bond making annual payments of $60 with par value $1,000.
a. What is the price of the coupon bond? b. What is the yield to maturity of the coupon bond?

3 Chapter 15 - CFA problem 5

The tables below show, respectively, the characteristics of two annual-pay bonds from the same issuer with the same priority in the event of default, and spot interest rates. Neither bonds price is consistent with the spot rates. Using the information in these tables, recommend either bond A or bond B for purchase.

Bond Characteristics

	Bond A	Bond B
Coupons	Annual	Annual
Maturity	3 years	3 years
Coupon rate	10%	6%
Yield to maturity	10.65%	10.75%
Price	98.40	88.34

Spot Interest Rates

Term (Years)	Spot Rates (Zero-Coupon)
1	5%
2	8
3	11

4 Solutions

12. a. The current bond price is:

($85 × 0.94340) + ($85 × 0.87352) + ($1,085 × 0.81637) = $1,040.20

This price implies a yield to maturity of 6.97%, as shown by the following:

[$85 × Annuity factor (6.97%, 3)] + [$1,000 × PV factor (6.97%, 3)] = $1,040.17

b. If one year from now y = 8%, then the bond price will be:

[$85 × Annuity factor (8%, 2)] + [$1,000 × PV factor (8%, 2)] = $1,008.92

The holding period rate of return is:

[$85 + ($1,008.92 – $1,040.20)]/$1,040.20 = 0.0516 = 5.16%