

EXAM FM QUESTIONS OF THE WEEK

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Week of February 26/07

The term structure of annual effective yield rates for zero coupon bonds is

Maturity	1	2	3	4
Yield	.05	.06	.06	.07

- (a) Find the present value A of a four year annuity immediate of 100 per year, and find the present value B of a four year annuity-due of 100 per year. What is B/A ?
- (b) Find the purchase price of a bond with annual coupons of 10% and face and redemption amount 100. Find the yield to maturity for the bond.

The solution can be found below.

Week of February 26/07 - Solution

(a) Annuity-immediate $pv = 100[v_{.05} + v_{.06}^2 + v_{.06}^3 + v_{.07}^4] = 344.49 = A$.

Annuity-due $pv = 100[1 + v_{.05} + v_{.06}^2 + v_{.06}^3] = 368.20 = B$.

$B/A = 1.0688$.

(b) Bond price $= 10(v_{.05} + v_{.06}^2 + v_{.06}^3) + 110v_{.07}^4 = 110.74$.

The yield to maturity is 6.84% .