1. (25%) The current price of an annual coupon bond is 100. The derivative of the price of the bond with respect to the yield to maturity is -700. The yield to maturity is an annual effective rate of 8%.

Calculate the duration of the bond.

(A) 7.00    (B) 7.49    (C) 7.56    (D) 7.69    (E) 8.0

2. (25%) Calculate the duration of a common stock that pays dividends at the end of each year into perpetuity. Assume that the dividend is constant, and that the effective rate of interest is 10%.

(A) 7    (B) 9    (C) 11    (D) 19    (E) 2

Your answers: (Leave blank if you need no grading)
3. (25%) Calculate the duration of a common stock that pays dividends at the end of each year into perpetuity. Assume that the dividend increases by 2% each year and that the effective rate of interest is 5%.

(A) 27  (B) 35  (C) 44  (D) 52  (E) 58

4. (25%) A $1,000 bond with 8% annual coupons matures in 3 years at $1,100. It is purchased at a price to yield 9% effective. Determine the modified duration of the bond.

(A) 2.340  (B) 2.551  (C) 2.566  (D) 2.589  (E) 2.796