

IBM sheets must be submitted no later than 17th of July 2013, by the end of the class.

Online or delayed submissions will not be accepted.

Important notes:

1- You must submit detailed solutions to those problems identified with asterisks (8 and 16), in separate sheets, no later than the above mentioned deadline.

2- Problems related to “equity valuation” are only for practice purposes, i.e. you are not required to answer those problems.

Problem 1

Which of the following statements is CORRECT?

- A. One of the advantages of the corporate form of organization is that it avoids double taxation.
- B. It is easier to transfer one’s ownership interest in a partnership than in a corporation.
- C. One of the disadvantages of a sole proprietorship is that the proprietor is exposed to unlimited liability.
- D. One of the advantages of a partnership is that every partner has equal say in the decision making process of the firm.
- E. Corporations are subject to the corporate income tax while partnerships are subject to partnership income tax.

Problem 2.

You invested \$2,000 at 5 percent compounded annually. Determine how much interest was earned in the fifth year? (Round your answer to two decimals.)

- A. \$100.00
- B. \$121.55
- C. \$500.00
- D. \$552.56
- E. \$562.00

Problem 3.

Ingrid has invested \$10,000 in a Guaranteed Investment Certificate that promises her 12% per year for the first 5 years and 4% per year for the next 10 years. The interest is compounded annually. At the end of the 15 years, the value of the investment will be closest to which value? (Your answer should be rounded to two decimals)

- A. \$26,086.96
- B. \$31,721.69
- C. \$32,425.86
- D. \$36,372.55
- E. \$37,432.45

Problem 4.

Your Aunt Tillie is going to retire on January 1, 2012 (her 65th birthday). She faces the following choices for funding her retirement. Her company pension plan will pay her \$2,500 per month

starting January 31, 2012. Every year, these annual payments will increase by 2% (all payments made in 2012 are \$2,500, all payments made in 2013 are $\$2,500 \times (1.02)$, and so on.) Her alternative is to take a lump of cash from the company when she leaves. Aunt Tillie expects to live until December 31, 2022 (and she gets the December cheque). Assume an APR of 6% with monthly compounding.

How big does the cash payment need to be to make her accept it instead of the promised monthly payments?

- A. \$241,149.00
- B. \$244,179.39
- C. \$263,641.08
- D. \$265,569.78
- E. \$275,455.75

Problem 5.

Elvira is considering buying a 20 year annuity due to provide her retirement income. The annuity will make annual payments of \$25,000. If her opportunity cost is 7%, what is the maximum value she would be willing to pay for this annuity now?

- A. \$1,096,629.42
- B. \$1,024,887.31
- C. \$283,389.88
- D. \$264,850.36

Problem 6.

Wilma borrows \$10,000 from "Jaw Breaker Joe" and promises to repay Joe a total of \$10,500 in one month. What is the effective annual interest rate charged by Joe?

- A. 5.00%
- B. 60.00%
- C. 79.59%
- D. 179.59%
- E. 180.59%

Problem 7.

The R&M Bank currently offers an investment account with an interest rate of 8% compounded semi-annually. R&M wants to offer customers another account with interest compounded monthly. If R&M wants the effective rates to be equal, what interest rate should R&M quote for the second account?

- A. 7.87%
- B. 8.00%
- C. 8.16%
- D. 24.00%
- E. 30.00%

**** Problem 8.**

Amir has obtained a \$250,000 mortgage. The mortgage is amortized over 25 years and the term of the mortgage is 5 years. The mortgage interest rate is 9% compounded semi-annually. Amir will begin making monthly payments at the end of the month. The monthly payment is closest to:

- A. \$2,069.94
- B. \$2,097.99
- C. \$5,169.68

- D. \$5,189.59
- E. \$8,001.59

Problem 9.

An investment pays \$1,000 per year for the first 4 years and \$2,000 per year for 6 years following. If the required rate of return is 8 percent compounded annually, how much is this investment worth?

- A. \$12,557.89
- B. \$10,108.04
- C. \$9,604.64
- D. \$9,138.52
- E. \$5,288.34

Problem 10.

2 years ago you bought a bond with two years to maturity, a face value of \$1,000, semiannual coupons, a coupon rate of 5% and yield-to-maturity of 2.5%. The government of Canada is retiring this bond today, when the yield-to-maturity on 2-year bonds equals 4%.

What cash payment will you receive on the day the bond matures?

- A. \$1,025.00
- B. \$1,020.00
- C. \$1,050.00
- D. \$1,040.00
- E. \$1,030.00

Problem 11.

Which of the following statements is **FALSE**?

- A. When the prevailing market interest rate is lower than the coupon rate, the bond will be traded at a premium.
- B. When the prevailing market interest rate is higher than the coupon rate, the bond will be traded at a discount.
- C. The longer the time to maturity, the less sensitive the market price of the bond becomes to changes in prevailing market rates.
- D. The higher the coupon rate, the less sensitive the market price of the bond becomes to changes in prevailing market rates.

Problem 12.

Andras Inc, a company that manufactures tons of shredded paper every year, issued 15- year bonds with a coupon rate of 10% 10 years ago. Coupons are paid semi-annually. At the time of issuance, the yield-to-maturity on those bonds equaled 10%. Currently the yield-to-maturity on semi-annual coupon bonds with the same maturity and risk is 5%.

a) Had you known in advance how interest rates would change, would you have bought these bonds?

b) What capital gain/loss - calculated in percentage terms - did investors in the company incur assuming they bought the bonds when they were first issued and they plan to sell them today?

(a), (b)

- A. Yes, I would have bought the bond, 21.88%
- B. Yes, I would have bought the bond, 10%
- C. Yes, I would have bought the bond, 5%
- D. No, I would have not bought the bond, 10%
- E. No, I would have not bought the bond, 5%

Problem 13.

The price of a ten-year semi-annual pay bond with a par value of \$1,000 and a 7.5 percent annual coupon and yield to maturity of 8.25 percent is closest to:

- A. \$949.60.
- B. \$950.24.
- C. \$1,051.48.
- D. \$1,052.11.
- E. \$1,100.12

Problem 14.

The yield to maturity (YTM) is:

- A. the discount rate used to evaluate bonds.
- B. the bond's internal rate of return.
- C. the yield that an investor would realize if he or she bought the bond at the current price, held it to maturity, received all the promised payments on their scheduled dates, and reinvested all the cash flows received at YTM.
- D. All of the above.

Problem 15.

What is the *current yield* of a four-year semi-annual pay bond with a par value of \$1,000 and a 4 percent coupon rate when the bond is priced at \$932.35?

- A. 4.29%
- B. 4.00%
- C. 5.95%
- D. 2.14%
- E. 3.13%

****Problem 16.**

The market yield of a twelve-year 8 percent semi-annual-pay bond is 6.6 percent. The bond is callable in four years and its yield to call is 6.48 percent. What is the call price of the bond?

- A. \$1,125.46
- B. \$1,114.81
- C. \$1,085.94
- D. \$1,080.00
- E. \$1,200.01

Problem 17. Jack borrowed \$42,000 and bought a new Volvo 850 GLT. The loan required six equal, end-of year payments, at an interest rate of 6% APR compounded annually. Immediately after making his third payment, Jack gets an offer of \$30,000 for the car. If he accepts the offer, and repays the balance on the loan, how much of the \$30,000 does Jack have left?

- A. \$8,753.84
- B. \$12,000.00
- C. \$9,000.00
- D. \$7,169.19
- E. \$6978.98

Problem 18.

An investor bought a bond at par and held it for one year. If the coupon rate is 5 percent, residual maturity of the bond is 8 years, and the yield to maturity of the bond when it was sold was 6 percent. What is the holding period return of the bond?

- A. 5%
- B. 6%
- C. -1.21%
- D. -1.23%
- E. 4.1%

Equity valuation- For preparation only. no need to submit the answers.

Problem 19.

Tree Island Resorts has just paid its shareholders a dividend of \$2 per share. The company intends to keep the dividend unchanged for the next 3 years, after which dividends will grow at a permanent rate of 2% per year forever.

What is the price of Island Resorts' shares if the required rate of return is 12%?

- A. \$16.90
- B. \$17.90
- C. \$19.04
- D. \$19.32
- E. \$21.07

Problem 20.

Wildlife Adventures has just paid a dividend of \$3.00. An analyst forecasts annual dividend growth of 10 percent for the next five years, then dividends will decrease by 2% per year indefinitely. The required return is 9 percent (EAR).

Calculate the current value per share.

- A. \$43.96
- B. \$43.39
- C. \$41.99
- D. \$41.08
- E. \$40.25

Problem 21.

The current market value of the 500,000 preferred shares of Clumsy Sports, Inc, is \$25 million. If the shares pay the quarterly dividend of \$1.25 on a par value of \$85 and the risk premium is 4.5 percent, what is the implied risk free rate?

- A. 4.00%
- B. 4.50%
- C. 5.00%
- D. 5.50%
- E. 6.00%

Problem 22.

Assuming g will remain constant, the dividend yield is a good measure of the required return on a common stock under which of the following circumstances?

- A. $g > 0$
- B. $g = 0$
- C. $g < 0$
- D. Under no circumstance
- E. Under all circumstance