# QuiZ 1 (SOLUTION)

**FINA 210: Business Finance**

**Spring 2011**

**Instructor:** Dr. Walid Saffar **Length:**  1 hour

**Date:** April 5, 2011

**This quiz counts for 10 points.**

Indicate which of the available choices best answers the question:

1. Which one of the following situations is most apt to create an agency problem?   
a. A company researcher is paid a bonus whenever she develops a new method of production that increases the shelf life of the firm's products.  
b. A key employee is granted stock options on an annual basis.  
c. Each employee is given a gift certificate for a free dinner for two whenever the firm remains accident-free for one year.  
**D**. The production manager is granted an annual bonus based on the size of the firm's total operations.  
e. The company president receives an annual bonus based on the market value of the firm's stock.

2. Selling Star has total assets of $280,000, a total asset turnover rate of 1.6, a debt-equity ratio of .4, and a return on equity of 13.25 percent. What is the firm's net income?   
a. $11,200  
**B**. $26,500  
c. $51,940  
d. $73,060  
e. $92,750

Equity multiplier = 1 + .4 = 1.4

Total equity = $280,000 / 1.4 = $200,000

Net income = $200,000 × .1325 = $26,500

3. The Cole Co. has a return on equity of 13.5 percent, a debt-equity ratio of .8, and a total asset turnover of 1.9. What is the return on assets?   
**A**. 7.50 percent  
b. 10.80 percent  
c. 20.52 percent  
d. 24.30 percent  
e. 25.65 percent

Equity multiplier = 1 + .8 = 1.8

Return on assets = Return on equity / Equity multiplier = .135 / 1.8 = 7.50 percent

4. International Relations, Inc. has a return on equity of 12.5 percent, a retention ratio of 70 percent, and a profit margin of 7 percent. The company paid $127.50 in dividends and has net working capital of $850. Net fixed assets are $2,025 and current liabilities are $400. What is the total equity of the firm?   
a. $1,457  
b. $1,625  
c. $2,543  
d. $2,875  
**E**. $3,400

. Net income = $127.50 / (1 − .70) = $425

Total equity = $425 / .125 = $3,400

5. Your grandfather started his own business 65 years ago. He opened a savings account at the end of his sixth month of business and contributed $x. Every six months since then he faithfully saved another $x. His savings account has paid an average interest rate of 5 percent. Today, his account is valued at $304,384.88. How much did your grandfather save every six months?   
a. $250  
**B**. $320  
c. $400  
d. $480  
e. $500



Enter 65×2 5/2 304,384.88

N I/Y PV PMT FV

Solve for -320.00

6. Currently, you owe the bank $16,475 on a car loan. The loan has an interest rate of 9.25 percent and monthly payments of $285. You realize that you cannot make enough money to keep up with the payments. After talking with your banker and explaining the situation, he has agreed to lower the monthly payments to $225 and keep the interest rate at 9.25 percent. How much longer will it take you to repay this loan than you had originally planned?   
a. 3.86 months  
b. 12.92 months  
c. 15.18 months  
**D**. 31.41 months  
e. 35.30 months



Enter 9.25/12 16,475 -285

N I/Y PV PMT FV

Solve for 76.82



Enter 9.25/12 16,475 -225

N I/Y PV PMT FV

Solve for 108.23

Difference = 108.23 months − 76.82 = 31.41 months

7. At the end of this month, Bryan will start saving $80 a month for retirement through his company's retirement plan. His employer will contribute an additional $.25 for every $1.00 that Bryan saves. If he is employed by this firm for 25 more years and earns an average of 11 percent on his retirement savings, how much will Bryan have in his retirement account 25 years from now?   
a. $126,090.66  
b. $127,246.50  
**C**. $157,613.33  
d. $159,058.12  
e. $165,494.00

. Total contribution = $80 + (.25 × $80) = $100



Enter 25×12 11/12 -100

N I/Y PV PMT FV

Solve for 157,613.33

8. You want to save $75 a month for the next 15 years and hope to earn an average rate of return of 14 percent. How much more will you have at the end of the 15 years if you invest your money at the beginning of each month rather than the end of each month?   
a. $0  
b. $514.29  
**C**. $530.06  
d. $562.50  
e. $1,125.00



Enter 15×12 14/12 -75BGN

N I/Y PV PMT FV

Solve for 45,964.03



Enter 15×12 14/12 -75

N I/Y PV PMT FV

Solve for 45,433.97

Difference = $45,964.03 − $45,433.97 = $530.06

9. Your brother will receive $450 a month for the next six years from an insurance settlement. The interest rate is 5 percent, compounded monthly, for the first two years and 6.5 percent, compounded monthly, for the final four years. What is this settlement worth to your brother today?   
a. $17,173.19  
b. $18,975.37  
c. $21,537.72  
d. $24,364.82  
**E**. $27,430.45



Enter 4×12 6.5/12 450

N I/Y PV PMT FV

Solve for -18,975.37



Enter 2×12 5/12 450 18,975.37

N I/Y PV PMT FV

Solve for -27,430.45

10. The National Bank offers personal loans at 8 percent compounded monthly. The Global Bank offers similar loans at 8.25 percent compounded quarterly. Which one of the following statements is correct concerning these two banks?   
a. The National Bank loan has an effective rate of 8.27 percent.  
b. The National Bank loan has an effective rate of 8.33 percent.  
c. The National Bank loan has a higher effective rate than the Global Bank loan.  
d. The Global Bank loan has an effective rate of 8.30 percent.  
**E**. The Global Bank loan has an effective rate of 8.51 percent.

. EARNational Bank = [1 + (.08 / 12)]12 − 1 = .0830 = 8.30 percent

EARGlobal Bank = [1 + (.0825 / 4)]4 − 1 = .0851= 8.51 percent