

Sample Questions for Mini-Test 2**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

- _____ 1. Your uncle would like to limit his interest rate risk and his default risk, but he would still like to invest in corporate bonds. Which of the possible bonds listed below best satisfies your uncle's criteria?
- AAA bond with 10 years to maturity.
 - BBB perpetual bond.
 - BBB bond with 10 years to maturity.
 - AAA bond with 5 years to maturity.
 - BBB bond with 5 years to maturity.
- _____ 2. The real risk-free rate, k^* , is 3 percent. Inflation is expected to average 2 percent a year for the next three years, after which time inflation is expected to average 3.5 percent a year. Assume that there is no maturity risk premium. A 7-year corporate bond has a yield of 7.6 percent. Assume that the liquidity premium on the corporate bond is 0.4 percent. What is the default risk premium on the corporate bond?
- 0.70%
 - 1.34%
 - 1.45%
 - 2.01%
 - 2.20%
- _____ 3. Stock A has a beta of 0.7, whereas Stock B has a beta of 1.3. Portfolio P has 50 percent invested in both Stocks A and B. Which of the following would occur if the market risk premium increased by 1 percentage point? (Assume that the risk-free rate remains constant.)
- The required return for Stock A would fall but the required return for Stock B would increase.
 - The required return for Portfolio P would remain unchanged.
 - The required return for both stocks would increase by 1 percentage point.
 - The required return for Stock A would increase by more than 1 percentage point, while the return for Stock B would increase by less than 1 percentage point.
 - The required return for Portfolio P would increase by 1 percentage point.
- _____ 4. Calculate the required rate of return for Mercury Inc., assuming that investors expect a 5 percent rate of inflation in the future. The real risk-free rate is equal to 3 percent and the market risk premium is 5 percent. Mercury has a beta of 2.0, and its realized rate of return has averaged 15 percent over the last 5 years.
- 15%
 - 16%
 - 17%
 - 18%
 - 20%

- _____ 5. You have determined the profitability of a planned project by finding the present value of all the cash flows from that project. Which of the following would cause the project to look more appealing in terms of the present value of those cash flows?
- The discount rate decreases.
 - The cash flows are extended over a longer period of time, but the total amount of the cash flows remains the same.
 - The discount rate increases.
 - Statements b and c are correct.
 - Statements a and b are correct.
- _____ 6. Frank Lewis has a 30-year, \$100,000 mortgage with a nominal interest rate of 10 percent and monthly compounding. Which of the following statements regarding his mortgage is most correct?
- The monthly payments will decline over time.
 - The proportion of the monthly payment that represents interest will be lower for the last payment than for the first payment on the loan.
 - The total dollar amount of principal being paid off each month gets larger as the loan approaches maturity.
 - Statements a and c are correct.
 - Statements b and c are correct.
- _____ 7. Gomez Electronics needs to arrange financing for its expansion program. Bank A offers to lend Gomez the required funds on a loan in which interest must be paid monthly, and the quoted rate is 8 percent. Bank B will charge 9 percent, with interest due at the end of the year. What is the difference in the effective annual rates charged by the two banks? (Note: this question requires the use of the equation for “Effective Annual Rate”, or EAR, to solve.)
- 0.25%
 - 0.50%
 - 0.70%
 - 1.00%
 - 1.25%
- _____ 8. The Howe family recently bought a house. The house has a 30-year, \$165,000 mortgage with monthly payments and a nominal (annual) interest rate of 8 percent. What is the total dollar amount of interest the family will pay during the first three years of their mortgage? (Assume that all payments are made at the end of the month; also note that the future value (FV) for the mortgage will be zero, because the mortgage will have been completely paid off when the last payment is made; finally, also note that this problem must be solved in two parts, as the answer key illustrates below; make sure you can at least do the first part, calculating what the monthly payment for the mortgage should be.)
- \$ 3,297.78
 - \$38,589.11
 - \$39,097.86
 - \$43,758.03
 - \$44,589.11

Name: _____

ID: A

- _____ 9. You deposited \$1,000 in a savings account that pays 8 percent interest, compounded quarterly, planning to use it to finish your last year in college. Eighteen months later, you decide to go to the Rocky Mountains to become a ski instructor rather than continue in school, so you close out your account. How much money will you receive?
- a. \$1,171
 - b. \$1,126
 - c. \$1,082
 - d. \$1,163
 - e. \$1,008

Sample Questions for Mini-Test 2

Answer Section

MULTIPLE CHOICE

1. ANS: D

2. ANS: B

$$\begin{aligned}
 k_{C7} &= k^* + IP_7 + MRP_7 + DRP_7 + LP_7 \\
 7.6\% &= 3.0\% + (2\% \times 3 + 3.5\% \times 4)/7 + 0.0\% + DRP_7 + 0.4\% \\
 7.6\% &= 3.0\% + 2.8571\% + 0.0\% + DRP_7 + 0.4\% \\
 7.6\% &= 6.2571\% + DRP_7 \\
 DRP_7 &= 1.3429\%.
 \end{aligned}$$

3. ANS: E

If the market risk premium ($k_M - k_{RF}$) increases, the required return on all stocks with positive betas would increase. Therefore, statement a is false. Since the required return for all positive beta stocks will increase, the return for Portfolio P must increase as well. Therefore, statement b is false. The required return on Stock A will increase by 0.7 percent, and the required return on Stock B will increase by 1.3 percent. Therefore, statement c is false. Statement d is the opposite of what would actually happen, so statement d is false. The beta for Portfolio P is $1.0[(50\% \times 0.7) + (50\% \times 1.3)]$. Therefore, the change in the portfolio's required return will be $b \times \Delta(k_M - k_{RF}) = 1.0 \times 1\% = 1\%$. Therefore, statement e is correct.

4. ANS: D

$$\begin{aligned}
 k_{RF} &= k^* + IP = 3\% + 5\% = 8\%. \\
 k_s &= 8\% + (5\%)2.0 = 18\%.
 \end{aligned}$$

5. ANS: A

6. ANS: E

Statements b and c are correct; therefore, statement e is the correct choice. Monthly payments will remain the same over the life of the loan.

7. ANS: C

Bank A: 8%, monthly.

$$\begin{aligned}
 EAR_A &= \left(1 + \frac{k_{Nom}}{m}\right)^m - 1 \\
 &= \left(1 + \frac{0.08}{12}\right)^{12} - 1 = 8.30\%.
 \end{aligned}$$

Bank B: 9%, interest due at end of year

$$EAR_B = 9\%.$$

$$9.00\% - 8.30\% = 0.70\%.$$

8. ANS: C

Step 1: Determine the monthly payment of the mortgage:

Enter the following inputs in the calculator:

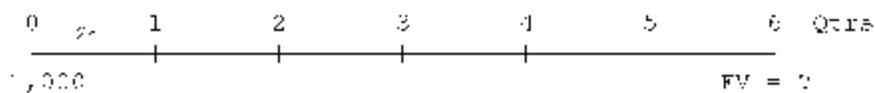
$N = 360$; $I = 8/12 = 0.6667$; $PV = -165000$; $FV = 0$; and then solve for $PMT = \$1,210.7115$.

Step 2: Determine the amount of interest during the first 3 years of the mortgage by using the calculator's amortization feature:

1 INPUT 36 ■ AMORT
= displays Int: \$39,097.8616.

9. ANS: B

Time Line:



Financial calculator solution:

Inputs: $N = 6$; $I = 2$; $PV = -1000$; $PMT = 0$. Output: $FV = \$1,126.16 \approx \$1,126$.