FCS5510 Unit02 Sample Homework Questions and Answers

CHAPTER 4. Financial Planning Taxation, and the Efficiency of Financial Markets.

1. a) An individual in the 28 percent federal income tax bracket and 15 percent long-term capital gains tax bracket brought and sold the following securities during the year:

	Cost Basis of Stock	Proceeds of Sale
ABC	$24,500	$28,600
DEF	35,400	31,000
GHI	31,000	36,000

What are the taxes owed on the short-term capital gains?

a. Profits on the sales (all are short-term):

ABC $28,600 - 24,500 = $4,100
DEF 31,000 - 35,400 = (4,400)
GHI 36,000 - 31,000 = 5,000
$4,700

Tax: .28($4,700) = $1,316

2. An investor is in the 33 percent tax bracket and pays long-term capital gains taxes of 15 percent. What are the taxes owed (or saved in the cases of losses) in the current tax year if he has net short-term capital gains of $3,000 and net long-term capital gains of $4,000?

The net short-term is taxed at 33 percent and long-term capital gain is taxed at 15 percent. Total tax is (.33)($3,000) + (.15)($4,000) = $1,590.

Other parts of this problem is concerned with the offsetting of long-term and short-term capital gains. The rule is that long-term losses are initially used to offset long-term gains and any remaining long-term losses are used to offset short-term gains. Short-term losses are initially used to offset short-term gains and any remaining short-term losses are used to offset long-term gains. If there is a net capital loss after netting out short-term and long-term capital gains and losses, the loss is used up to $3,000 against ordinary income.

3. You are in the 28 percent income tax bracket and pay long-term capital gains taxes of 15 percent. On January 2, 200X, you

buy 100 shares of ZYX for $60. On October 2, 200X, you sell 100 shares of ZYX for $40. On Octorber10, 200X, you purchase 100 shares of ZYX for $25. What are the taxes owed or saved in the current year?

This problem illustrates the wash sale. The stock is repurchased on October 10, which is less than thirty-one days after the sale on October 2, which generated the $2,000 loss. The loss is currently disallowed for tax purposes, and the cost basis of the shares purchased on October 10 is $60, the cost basis of the initial purchase.

4. You are in the 25 percent income tax bracket. What are the taxes owed or saved if you a) contribute $2,000 to a 401(k) plan? b)contribute $2,000 to a Roth IRA?

a. The $2,000 contribution to the 401(k) plan reduces income by $2,000 and saves $500.

b. The $2,000 contribution to the Roth IRA does not reduce income and there is no current tax saving. (The funds, however, are not taxed when they are distributed from the Roth IRA.)

CHAPTER 5. RISK AND PORTFOLIO MANAGEMENT

1. You are considering three stocks with the following expected dividend yields and capital gains:

--	Dividend Yield	Capital Gain
A	14%	0%
B	8	6
C	0	14

What is the expected return on stock A?

a. The expected return on an investment is the sum of the dividend yield and the anticipated growth in the value of the asset. For stock A that sum is 14 percent.

2. A portfolio consists of assets with the following expected returns:

---	Expected Return	Weight in Portfolio
Real estate	16%	20%
Low-quality bonds	15	10
AT&T stock	12	30

Savings account	**5**	**40**

What is the expected return on the portfolio?

a. The expected return on a portfolio is the weighted average of the assets included in the portfolio and their expected returns. In this case the weighted average is E(return) = .2(.16) + .1(.15) + .3(.12) + .4(.05) = 10.3%.

3. You are given the following information concerning two stocks:

---	A	B
Expected return	**10%**	**14%**
Standard deviation of the expected return	**3.0**	**5.0**
Correlation coefficient of the returns	**-.1**	

a) What is the expected return on a portfolio consisting of 40 percent in stock A and 60 percent in stock B? b) What is the standard deviation of this portfolio?

a. Expected return of the portfolio:
(.4)(10%) + (.6)(14%) = 12.4%

b. Standard deviation of the portfolio:

$$[(.4)^2(3)^2 + (.6)^2(5)^2 + 2(.4)(.6)(3)(5)(-.1)]^{.5} = 3.118$$

4. You are given the following information:

Expected return on stock A	**12%**
Expected return on stock B	**20%**
Standard deviation of returns: **Stock A** **Stock B**	**---** **1.0** **6.0**
Correlation coefficient of the returns on stocks A and B	**+.2**

What is the expected return of a portfolio consisting of 75 percent in stock A and 25 percent in stock B?

Position Expected Return Standard Deviation

75%A/25%B 14% 1.81

Computations of the standard deviations:
75%A-25%B:

[(.75)2(1)2 + (.25)2(6)2 + 2(.75)(.25)(1)(6)(.2)].5
= 1.806

5. What is the beta of a portfolio consisting of one share of each of the following stocks given their respective prices and beta coefficients?

Stock	Price	Beta
A	$10	1.4
B	24	0.8
C	41	1.3
D	19	1.8

Total invested: $10 + 24 + 41 + 19 = $94
Weight of each stock in portfolio (assuming one share of each stock):

A: $10/$94 = 11%
B: $24/$94 = 26%
C: $41/$94 = 44%
D: $19/$94 = 20%

Portfolio beta:
(.11)(1.4) + (.26)(0.8) + (.44)(1.3) + (.20)(1.8) = 1.29

6. What is the return on a stock according to the security market line if the risk-free rate is 6 percent, the return on the market is 10 percent, and the stock's beta is 1.5?

The return according to the security market line is

rs = rf + (rm - rf)beta.

The return on the stock should be

rs = .06 + (.1 - .06)1.5 = 0.12 = 12%.