## Homework 8

 What are the portfolio weights for a portfolio that has 185 shares of stock A that sells for \$64 per share, 115 shares of stock B that sells for \$49.00 per share? Total Value= 185(64) + 115(49) = \$17,475

Portfolio Weight for each stock: xA= 185(64)/17,475= 0.6775 xB= 115(49)/17,475=0.323

- You own a portfolio that is 25% invested in stock X, 35% in stock Y, and 40% in stock Z. The expected return on these three stocks are 10%, 13%, an 15%, respectively. What is expected return on the portfolio?
   E(R)= 0.25(0.10)+0.35(0.13)+0.40(0.15)= 13.05 or 0.1305 on expected return
- You own a stock portfolio, invested 15% in stock Q. 25% in stock R, 40% in stock S, and 20% in stock T. Betas for these four stocks are .78, .87, 1.13, and 1.45, respectively. What is the portfolio beta?
   Portfolio Beta= Respective Beta X Respective Weight
   Portfolio Beta= (0.15X0.75)+(0.25X0.87)+(0.4X1.13)+(0.2X1.45)= 1.08
- A stock has a beta of 1.14, the expected return on the market is 10.9%, and the risk free rate is 3.6%. What must the expected return of this stock be?
  Expected Return= RF + Beta X (Market Return- Rf) 0.036+(1.14(0.109-0.036))=11.92%

5. Asset W has expected return of 11.6% and a beta of 1.23. If the risk free rate is 3.15%, complete the following table for portfolios of asset W, and a risk free asset. Illustrate the relationship between portfolio, expected return and portfolio beta by plotting the expected returns against the betas in a graph. What is the slope of the line that results?

Percent on Asset	Expected Return	Portfolio Beta
0%	(0X11.6)+(1+3.15)= 3.15%	0

25%	(0.25X11.6)+(0.75X3.15)=5.26%	1.23X0.25=0.3075
50%	(0.50X11.6)+(0.50X3.15)=7.37%	1.23x0.50=0.6150
75%	(0.75X11.6)+(0.25X3.15)=9.48%	1.23X0.75=0.9225
100%	(1X11.6)+(0X3.15)=11.6%	1.23X1=1.2300
125%	(1.25X11.6)+(0.25X3.15)=13.71%	1.23X1.25=1.5375
150%	(1.50X11.6)+(0.50X3.15)=15.82%	1.23X1.50=1.8450

6. Stock Y has a beta of 1.2. An expected return of 11.4%. Stock Z has a beta of .8 and an expected return of 8%. If the risk free rate is 2.5% and the market risk premium is 7%, are these stocks priced correctly? If not, what should the correct prices be?
Expected Return= Risk free rate+ Beta(Market Rate – Risk Free rate)
8=0.8(11.4+0.2)/1.2+0.2
8=7.6+0.1333+0.2
RF= (8-7.6)/(0.1333+0.2)= 1.2% Risk Free Rate