1) A stock has had the following year-end prices and dividends (15pts)

Year	Price	Dividend
2005	$49.62	
2006	$55.83	$0.68
2007	$57.03	$0.73
2008	$50.25	$0.84
2009	$53.82	$0.91
2010	$64.18	$1.02

a. What are annual returns for this stock? (5pts)

b. What is the average return? (5pts)

Note: If you were not able to solve part a) assume returns of 5%, 2%, -6%, 4% and 12% for parts b) and c)

c. What is the standard deviation of returns? (5pts)

2) Based on the following information, and knowing the states of the economy are equally likely, calculate the covariance and correlation coefficient between the two stocks. (10pts)

States of the Economy	Stock A	Stock B
Bear	8.2%	-6.5%
Normal	9.5%	12.4%
Bull	6.3%	18.5%

The Expected Returns for stocks A and B are respectively 8% and 8.13%, and the Standard Deviation of Returns for stocks A and B are respectively 1.31% and 10.64%.

3) The RobbComputer Corporation is trying to choose between the following two mutually exclusive design projects (20pts)

Year	Cash Flow 1	Cash Flow 2
0	-$40,000	-$15,000
1	$21,000	$8,500
2	$21,000	$8,500
3	$21,000	$8,500

a. Using the payback method, which project should the firm choose? (5pts)

b. If the required return is 10% and Robb Computer applies the profitability index decision rule, which project should the firm accept? (5pts)

c. If the company applies the NPV decision rule, which project it takes? (5pts)

d. If the decisions in b) and c) are different, explain why. Improve the profitability index method, using the incremental Profitability Index, such that the results in the two decision rules would coincide. Show. (5pts)

4) Margarite's Enterprises is considering a new project. The project will require $325,000 for new fixed assets, $160,000 for additional inventory and $35,000 for additional accounts receivable. Accounts payables are expected to increase by $100,000 and long-term debt is expected to increase by $300,000. The project has a 5-year life. The fixed assets will be depreciated straight-line to a zero book value over the life of the project. At the end of the project, the fixed assets can be sold for 25% of their original cost. The net working capital returns to its original level at the end of the project. The project is expected to generate annual sales of $554,000 and costs of $430,000. The tax rate is 35% and the required rate of return is 15%.

   Should the project go ahead? (24pts)

5) Below is a table with return statistics for two stocks, ABC and XYZ and Treasury Bills. (25pts)

Stock	Expected Return	Standard Deviation
ABC	15%	33%
XYZ	25%	46%
T. Bills	5%	0%

Additionally, you know that the Correlation Coefficient between the two stocks is 0.5698.

a. Find the Expected Return and Standard Deviation of a Portfolio composed of 25% ABC and 75% XYZ. (10pts)

b. What are the different combinations of ABC and XYZ a rational, risk-averse investor would never want to hold? (5pts)

c. Your client, Mr. Grey, wants to invest in a portfolio composed by these two stocks that would generate an expected return of 19%. What combination of ABC and XYZ would achieve that result? (5pts)

d. Your other client, Mr. Yellow, has very peculiar investment ideas and believes portfolios should be composed of a single stock and Treasury Bills. If that is the case, which stock would you advise him to invest in? (5pts)

6) A portfolio that combines the risk-free asset and the market portfolio has an expected return of 9% and a standard deviation of 13%.

The risk free rate is 5% and the expected return on the market portfolio is 12%. Assume the Capital Asset Pricing Model holds.

What expected return would a security earn if it had a 0.45 correlation coefficient with the market portfolio and a standard deviation of 40% (6pts)