**Seminar 3 Example Solutuions**

**1.** If you are promised a nominal return of 12% on a one year investment, and you expect the rate of inflation to be 3%, what real rate do you expect to earn? 



**2.** You purchased a share of stock for $29. One year later you received $2.25 as dividend and sold the share for $28. Your holding-period return was \_\_\_\_\_\_\_\_\_. 



**3.** An investor invests 70% of her wealth in a risky asset with an expected rate of return of 15% and a variance of 5% and she puts 30% in a Treasury bill that pays 5%. Her portfolio's expected rate of return and standard deviation are \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ respectively. 



**4.** Suppose your expectation regarding the stock market are as follows:

|  |  |  |
| --- | --- | --- |
| **State of the Economy** | **Probability** | **HPR** |
| **Boom** | 0.3 | 44% |
| **Normal growth** | 0.4 | 14% |
| **Recession** | 0.3 | -16% |

Compute the mean (Expected return) and standard deviation of the HPR on stocks.

E(r) = [0.3  44%] + [0.4  14%] + [0.3  (–16%)] = 14%

σ2 = [0.3  (44 – 14)2] + [0.4  (14 – 14)2] + [0.3  (–16 – 14)2] = 540

σ = 23.24%

**5.** Your investment has a 40% chance of earning a 15% rate of return, a 50% chance of earning a 10% rate of return and a 10% chance of losing 3%. What is the standard deviation of this investment?



**6.** Consider the following two investment alternatives. First, a risky portfolio that pays 20% rate of return with a probability of 60% or 5% with a probability of 40%. Second, a treasury bill that pays 6%. If you invest $50,000 in the risky portfolio, your expected profit would be \_\_\_\_\_\_\_\_\_. 



**7.** Consider the following two investment alternatives. First, a risky portfolio that pays 15% rate of return with a probability of 40% or 5% with a probability of 60%. Second, a treasury bill that pays 6%. The risk premium on the risky investment is \_\_\_\_\_\_\_\_\_. 

