1. Jimmy McGill Inc. just distributed $4 per share as dividends. Going forward, dividends are expected to grow by 5% each year. The market rate is 10%.

The following plan is going to be voted in the next board meeting of Jimmy McGill: Retain next year’s dividend, distribute $4 the following year and thereafter with an expected growth rate of 6%.

As a stock holder of the company, would you vote yes or no for this plan? (Hint: Your objective is to have the highest price for the stock)

*Pt = [Dt+1 ] / (R – g)*

*Vote NO would result in: (1.05)4/(0.1-0.05) = $84 as the price of the stock today.*

*Vote YES would result in: [4/(0.1-0.06)]/(1.12)=$82.64 as the price of the stock today.*

*Vote NO.*

2. You have observed the following returns on Corporation X’s stock over the past five years: 34%, 16%, 19%, -21%, 8%. Suppose the average Treasury Bill rate was 1.2%.

1. What was your holding period return?

*(1.34 \*1.16 \*1.19 \*.79 \*1.08) -1 = 57.82%*

b. What was the arithmetic average return on stock X over this five year period?

*(34% +16% +19% - 21% + 8%) / 5 = 11.2%*

d. What was the average risk premium on Corporation X’s stock?

*The risk premium is the difference between the average return of X and the risk free rate, that is, the Treasury Bill rate.*

*Then, the real risk premium of Corporation X stock is 11.2% - 1.2% = 10%*

*3***.** Bruins Inc. is a startup. It is estimated that the company will not be paying any dividends for the coming 6 years because it needs to use its earnings to fuel growth. The company is expected to pay dividends of $3.6 a share 7 years from today and will increase the dividends at a 4% per year thereafter. If the rate that is expected from a company with equal risk is 12%, if you purchase one Bruins stock today to sell it one year from today, what would be your expected return?

*Using a constant growth stock pricing, Bruins stock price at t=6, 3.6/(.12-.04) = $45*

*Price at t=0 is 45/1.126, price at t=1 is 45/1.125, which gives a return of 12%, as expected, it is the same as your alternative investment.*

*4.* You invested in a portfolio with 30% expected return with 35% standard deviation. What is the approximate probability that your money will double or more next year given that the returns are normally distributed?

*Initial investment will double when the realized return is 100%. In this case, the realized return of the portfolio will fall within the range of [30% - 2(35%),30% + 2(35%)] = (-100%,+100%] with 95% probability. Then, the return will be at least 100% with (1-.95)/2 probability=2.5%. (more fine-tuned answer: (1-95.44)/2=2.28%)*