**Homework on interest rate and asset valuation**

1. There are two bonds. Each pays 4% annual interest. Bond A matures in five years and bond B matures in ten years. At the time of maturity, each bond will pay back annual coupon and the principle. The Principle of each bond is 1,000,000 dollars. When the discount rate is 4% per year. What are the prices of bond A and B? When the discount rate is 2% per year. What are the prices of bond A and B? When the discount rate is 6% per year. What are the prices of bond A and B? How the change of bond prices is related to the maturity of bonds?
2. There are two bonds. Both mature in ten years. Bond A pays 3% annual interest. Bond B pays 7% annual interest. At the time of maturity, each bond will pay back annual coupon and the principle. The principle of each bond is 1,000,000 dollars. When the discount rate is 4% per year. What are the prices of bond A and B? When the discount rate is 2% per year. What are the prices of bond A and B? When the discount rate is 6% per year. What are the prices of bond A and B? How the change of bond prices, percentage wise, is related to the coupon rate of bonds?
3. There are three stocks. Each stock pays 2 dollars of dividend per share this year. Stock A’s dividend is expected to grow 2% per year to perpetuity. Stock B’s dividend is expected to stay the same to perpetuity. Stock C’s dividend is expected to decline 2% per year to perpetuity. When the discount rate is 4% per year. What are the prices of stock A, B and C? When the discount rate is 3% per year. What are the prices of stock A, B and C? When the discount rate is 5% per year. What are the prices of stock A, B and C? How the change of stock prices, percentage wise, is related to the growth rate of dividend payments?