MBAS 821 Assignment 2 (Due on August 21st at 11:59pm through Course Portal)

1. A bond has face value of $1,000, coupon rate of 20% with quarterly payments, YTM of 8% (APR), and is maturing in 10 years.
2. What should be the price of the bond?
3. If the bond is priced at $1,500, what is the YTM (in APR)?

**Coupon payment = 1000 x 20% / 4 = $50**

**Effective YTM every quarter (YTM40-) = 8% / 4 = 2%**

**Total number of periods (n) = 10 x 4 = 40**

**b)**

**Using Excel to solve (RATE function)**

**Check Assignment 2 excel.xlsx**

1. Vision Enterprises Inc. had sales of $18.5 billion in 2019. It is expected that the sales will grow at 10% in 2020, but then slow down by 1% per year. (i.e. 9% in 2021, 8% in 2022, etc.) The growth rate will stop declining and will stay at a terminal rate of 3% starting from 2027. It is expected that EBIT will be 15% of sales, net working capital has been and will be maintained at 10% of sales, and depreciation will cancel out capital expenditure every year.

If Vision Enterprises Inc. has $1.6 billion in cash, $40 million in debt, 520 million shares outstanding, a tax rate of 35%, weighted average cost of capital of 10%. What is the estimate of its stock price at the beginning of 2020?

Hint: Recall the formula

**Stock price = $64.82**

**Check Assignment 2 excel.xlsx**

1. Below are the possible returns of two stocks:

|  |  |  |
| --- | --- | --- |
| Probability | Stock A Return | Stock B Return |
| 10% | -10% | +30% |
| 20% | +30% | -10% |
| 30% | +15% | +10% |
| 40% | -5% | 0% |

1. What is the expected return and standard deviation of a portfolio with 30% A and 70% B?
2. Plot the graph of feasible set of investments. (i.e. vary the weights of the two stocks and plot the return vs standard deviation graph like in slide 42 of topic 5)
3. Is the portfolio with 30% A and 70% within the efficient frontier?
4. **From graph we can see a portfolio with 30% A and 70% B is at the bottom half of the graph. This means that this portfolio is not efficient. i.e. There exist a portfolio that has the same risk but higher return than this portfolio.**

**Check Assignment 2 excel.xlsx**