1) After graduating from UCSB, you remembered the advice from your Econ134a Professor and immediately starting saving for retirement, which you expect to be 30 years from now.

You started to carrying out this retirement plan:

- Invest $700 a month in a Stock Account
- Invest $300 a month in a Bond Account

The return to the Stock Account is expected to be 11% and the Return to the Bond Account is expected to be 7%. Both rates are Stated Annual Rates.

When you retire, you will combine the money you accumulated in the two Accounts and put it in an Account earning 9% (Stated Annual Rate). If you plan to make monthly withdrawals for 25 years from this Account, how much will be the value of those withdrawals?

2) After graduating, you were hired by the prestigious Rosario, Cho and Lang Inc. This firm is one of the top firms in stock value analysis. You are asked to analyze the stock of Santa Barbara Technologies Corp.

The firm just announced that its latest Earnings per share are $10. They re-invested all of it in the firm's operations. They also made the additional announcements:

- The Firm will retain 100% of the next 5 Earnings
- After that, the Firm will start paying 40% of Earnings as Dividends

Currently, and for the first phase in their business activity, the Return on the Funds re-invested will be 20%. When the second phase of their activity starts, the Return of the Funds re-invested will drop to 15%.

Your preliminary research also told you that the risk of Santa Barbara Technologies Corp. business is correctly measured by a 15% discount rate.

a) What is the current Price of Santa Barbara Technologies Corp. stock?

Note: If you were not able to calculate the Price in part a), assume it is $100. **This is NOT the correct price!!**

b) What is the Present Value of Growth Opportunities?

c) What is the Rate of Return the shareholders of Santa Barbara Technologies Corp. enjoy? How does it split between Dividend Yield and Capital Gains Yield in each of the two phases of their business?

d) If the company made the announcement NEVER to pay Dividends in the future, what would be the price of the stock?

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3) Rosario, Cho and Lang also have a smaller Fixed Income Analysis Division. In it, Bonds are analyzed and priced. Your predecessor in this division was clearly a casting error and you were asked to correct his mistakes.

You have in front of you a table with the information on three different Bonds. Your predecessor was not able to complete it. The Bonds only pay one Coupon per year and have a $1,000 Face Value.

Maturity (years)	Price	Yield to Maturity	Coupon Rate
1	????	5.5%	0.0%
2	$1,009.10	????	7.0%
3	$947.99	7.5%	????

a) Complete the Table

b) Next year, the Federal Reserve is expected to lower the interest rates once more. You predict this will reduce the Yield to Maturity of all Bonds by 1%.

i. What is the yearly rate of Return holders of any of the three Bonds will enjoy?

ii. How does it split between Current Yield and Capital Gains Yield?

Note: If you were not able to complete the Table assume a price of $950 for Bond 1, a Yield to Maturity of 6% for Bond 2 and a Coupon Rate of 5% for Bond 3 in order to answer part b). **These are NOT the correct values!!!!**

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4) After cleaning up the Fixed Income Division mess, you were asked to analyze a Project that has just arrived at the offices of Rosario, Cho and Lang Inc.

It's from the firm Deceptor Sports. This firm specializes in Winter Sports apparel. They are planning to launch a new line of Snowboards. Given the speed by which the Snowboard business moves, they expected only to have a market for those Snowboards for the next three years.

In order to kick-start production they require to buy state-of-the-art machines immediately. They will cost $12.3 million. These machines will be depreciated using a straight line rule for the next three years, until they have zero Book Value. The machines can them be sold by $3.5 million at the end of the project.

The sales of the new Snowboards are expected to be $27 million in the first year, $30 million in the second and $37.8 in the third.

However, this new line will hurt the sales of the previous premium line in $9 million in the first year, $12 million in the second year and $15 million in the third year.

Because the total number of Snowboards sold is likely to increase, they expect to increase the sales of Boots. The increase in Boot sales is expected to be $6.25 million, $7.5 million and $8.75 million in the three years of operations.

The Variable Costs follow this rule:

- For Snowboards they are 1/3 of the Value of Snowboard Sales
- For Boots they are 20% of the Value of Boot Sales

In addition to the Variable Costs, the equipment has Fixed Costs of $8 million every year. Also, from the already existing $0.2 million in security costs, the Accounting Department decided to impute 20% of it to the new project.

The Net Working Capital needs are expected to have a onetime increase of $0.75 million in the beginning of the project and will be recovered at the end of year 3.

The firm is taxed at 40% and you believe the risk of the business is appropriately measured by a 14% discount rate.

a) Should Deceptor Sports launch the new Snowboard Line?

b) What are the Payback, Discounted Payback and Profitability Index of the Project?

Note: If you were not able to calculate de Cash Flows for part a), you can assume the following values in order to answer part b): Time 0: -$12 millions; Time 1: $8 million; Time 2: $11 million; Time 3: $14 million. **These are NOT the correct values!!!!**

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