Quiz 1: Equity Instruments

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. You have been asked to estimate the beta for Vitale Enterprises, a company that produces and sells cosmetics in the United States. The firm is publicly traded and has 100 million shares outstanding, trading at $10 a share; the firm also has $500 million in debt outstanding (in market value terms). The regression beta for the firm has a very large standard error but the average regression beta for publicly traded cosmetics companies in the United States is 1.20; the average market debt to equity ratio for these companies is 80%. The tax rate for all firms in the US is 40%, the treasury bond rate is 4.2% and the risk premium for mature equity markets is 4%.

a. Make your best estimate of the cost of equity for Vitale Enterprises. (2 points)
b. Vitale is planning on buying a clothing company. It is estimated that the acquisition will cost $1 billion and that half of the funds for acquisition will come from a new debt issue. The average unlevered beta for clothing companies is 1.25 and you can continue to use a 40% tax rate. Estimate the new cost of equity for Vitale. (2 points)
2. You have been asked to review the cashflow to the firm estimated for Atlantic Paper by an analyst at a leading investment bank. The cashflow computed by the analyst is listed below:

- Earnings before interest and taxes: $100 million
- Taxes paid: $21 million (from tax books)
- Operating Income after taxes: $79 million
- Depreciation and Amortization: $50 million
- Capital Expenditures: $30 million
- Increase in Working Capital: $10 million
- Free Cashflow to Firm: $89 million

You know that Atlantic Paper had $40 million in interest expenses during the year and that there were no other non-operating income or expenses. You also know that the company made an acquisition (which the analyst ignored) with stock for $40 million during the year, that the cash balance of the firm decreased by $20 million during the year and that current liabilities include no short-term debt. Estimate the correct free cashflow to the firm last year. (The analyst estimated working capital by subtracting total current liabilities from total current assets) (3 points)
3. Lubbock Inc. is a small chemical company located in Texas. Analysts have estimated a growth in earnings per share for the company of 15% in the next year. In the most recent financial year, the company earned a return on equity of 12% and reinvested 50% of its earnings back into the company. It expects to maintain this retention ratio in the future.
   a. Assuming that the return on equity on existing investments remains at 12%, what will the return on equity on new investments have to be next year to generate a growth rate of 15% in earnings? (1 point)

   b. If the firm can raise the return on equity on existing investments by becoming more efficient, what will the return on equity on all investments have to be next year to generate a 15% growth rate in earnings? (2 points)