FM250 Capital Structure Questions

Question 1

The common stock and debt of Northern Sludge are valued at $50 million and $30 million, respectively. Investors currently require a 16% return on the firm's common stock and 8% on its debt. If Northern Sludge issues an additional $10 million of common stock and uses this money to retire (i.e., to pay back) debt, what will happen to the expected return on its common stock? Assume first that the change in capital structure *does not* affect the risk of the debt. Suppose next that the change in capital structure *increased* the risk of the debt. Would your previous answer then under- or overstate the effect on the expected return on the firm's common stock? Assume throughout that the MM assumptions hold (i.e., no taxes, no costs of financial distress).

Question 2

Executive Chalk is financed solely by common stock and has 25 million shares outstanding with a market price of $10 a share. It announces that it intends to issue $160 million of debt and use the proceeds to buy back common stock. Assume that the MM assumptions hold (i.e., no taxes, no costs of financial distress).

a) What is the value of the firm before and after the proposed capital structure change?

b) What is the debt-to-equity ratio after the capital structure change?

c) What is the stock price after the capital structure change?

d) Who (if anyone) gains or loses?

Question 3

True or false?

a) "As the firm borrows more and debt becomes riskier, both stockholders and bondholders demand higher rates of return. Thus, by reducing the debt ratio we can reduce both the cost of debt and the cost of equity, making everybody better off."

b) "Moderate borrowing doesn't significantly affect the probability of financial distress or bankruptcy. Consequently, moderate borrowing won't increase the expected rate of return demanded by stockholders."

Question 4

Compute the PV of the interest tax shields generated by the following three debt issues. In each case the debt is risk free while the corporate tax rate is 35%.

a) A $1,000 one-year loan at the risk-free rate of 8%.

b) A five-year loan of $1,000 at the risk-free rate of 8%. Assume interest is paid annually while the principal is paid back at maturity.

c) A $1,000 debt perpetuity at the risk-free rate of 7%.