The founders were relatively wealthy, mid-30s individuals when they started the company, and had enough confidence in their concept to commit most of their own funds to the new venture. Still, the capital requirements brought on by extremely rapid growth soon exhausted their personal funds. They were forced to borrow heavily, and, eventually, to float an issue of common stock. The stock trades on the over-the-counter market, recently selling in the neighborhood of $50 per share.

***Virtual Assist.com's*** the current year balance sheet, which is shown in Table 1.

**(1) *Virtual Assist.com's*** long-term debt consists of 13 percent coupon, semiannual payment bonds with 15 years remaining to maturity. The bonds currently trade at a price of $1,230.58 per $1,000 par value bond. The bonds are not callable, and they are rated BBB.

**(2)** The founders have an aversion to short-term debt, so ***Virtual Assist.com*** uses such debt only to fund cyclical working capital needs.

**(3) *Virtual Assist.com's*** federal-plus-state tax rate is 40 percent.

**Table 1**

***Virtual Assist.com*:** Balance Sheet

for the Current Year Ended December 31

(In Millions of Dollars)

Cash and

Securities 22.9

Accounts

Receivable 118.8

Inventory 27.5

Current assets 169.2

Net fixed assets 343.4

\_\_\_\_\_\_

Total Assets $ 512.6

Accounts 17.1

payable

Accruals 22.5

Notes payable 5.9

\_\_\_\_\_\_\_\_

Current

Liabilities 45.8

Long-term debt 183.6

Preferred stock 43.6

Common stock 239.9

\_\_\_\_\_\_\_\_\_

Total claims 512.6

**(4)** The company’s preferred stock pays a dividend of $2.50 per quarter; it has a par value of $100; it is noncallable and perpetual; and it is traded in the over-the-counter market at a current price of $113.10 per share. A flotation cost of $2.00 per share would be required on a new issue of preferred.

**(5)** The firm’s current (i.e., last) dividend (D0) was $1.73, and dividends are expected to grow at about a 10 percent rate in the foreseeable future. Some analysts expect the company’s recent growth rate to continue, others expect it to go to zero as new competition enters the market; the majority anticipate that a growth rate of about 10 percent will continue indefinitely. ***Virtual Assist.com*** common stock now sells at a price of about $50 per share. The company has 7.5 million common shares outstanding.

**(6)** The current yield on long-term T-bonds is 7 percent, and a prominent investment banking firm (*one of the few still solvent*) has recently estimated that the market risk premium is 6 percentage (since current market return is estimated at 13%). The firm’s historical beta, as measured by several analysts who follow the stock, is 1.2.

**(7)** The required rate of return on an average (A-rated) company’s long-term debt is 9 percent.

**(8) *Virtual Assist.com*** is forecasting end of current earnings available to the common stockholders of $6 million, and a dividend pay out ratio of 10%.

**(9)** Depreciation of $13,500,000 is expected for the coming year.

**(10) *Virtual Assist.com's*** investment bankers believe that a new common stock issue would involve total flotation costs (including underwriting costs, market pressure from increased supply, and market pressure from negative signaling effects) of 30 percent.

**(11)** The market value target capital structure calls for 30 percent long-term debt, 10 percent preferred stock, and 60 percent common stock.

What specific items of capital should be included in ***Virtual Assist.com's*** estimated weighted average cost of capital (WACC)? Should before‑tax or after‑tax values be used? Should historical (embedded) or new (marginal) values be used? Why?

1. How can ***Virtual Assist.com*** obtain a market risk premium for use in a CAPM cost-of- equity calculation? Discuss both the possibility of obtaining an estimate from some other organization, and also the ways in which ***Virtual Assist.com*** could calculate a market risk premium in-house.

2. Use the discounted cash flow (DCF) method to obtain an estimate of ***Virtual Assist.com's*** cost of retained earnings. Use the estimate of the firm's future growth in dividends expected by the majority of analysts.

3. Use the bond-yield-plus-risk-premium approach to estimate ***Virtual Assist.com's*** cost of retained earnings. But instead of using a subjective, ad hoc guess for the risk premium in the formula, estimate the risk premium to be the difference between the required rate of return on an average A-rated company's long-term debt and the current average common stock market return. What does this method of computing the risk premium represent?

4. Now that you have three estimates for retained earnings, what is your final estimate for retained earnings? Illustrate (by computations) and discuss what approach you would use to analyze and reconcile the differences in the three forecasts, what other information you might need, and how you would determine a final value to use for cost of retained earnings.

5. What is your estimate of ***Virtual Assist.com's*** cost of new common stock? What are some potential weaknesses in the procedures you used to obtain this estimate?

6. a. How large could the company’s capital budget be before the firm is forced to sell new common stock in order to continue taking on profitable projects?

1. What is the WACC for new dollars of capital budget raised *before* the firm needs to sell new common stock?
2. What is the WACC for new dollars of capital budget raised *after* the firm needs to sell new common stock?

b. Would the MCC schedule remain constant beyond the retained earnings break point, no matter how much new capital it raised? Explain. Again, ignore depreciation.

c. Now how large could the company’s capital budget be before the firm is forced to sell new common stock in order to continue taking on profitable projects?

1. If depreciation were simply ignored, would this improve or impair the acceptability of proposed capital projects? Explain.

7. a. What are ***Virtual Assist.com's*** book value weights of debt, preferred stock, and common stock? (Hint: Consider only long‑term sources of capital.) Show how they are computed.

b. What are ***Virtual Assist.com's*** market value weights of debt, preferred stock, and common stock? Show how they are computed?

c. What weights should be used when calculating the firm’s weighted average cost of capital? Why?