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.

1. a. What is your estimate of ***Virtual Assist.com's*** cost of debt?

b. Should flotation costs be included in the component cost of debt calculation? Explain.

c. Should the nominal cost of debt or the effective annual rate be used? Explain.

1. How valid is an estimate of the cost of debt based on 15‑year bonds if the firm normally issues 30‑year long‑term debt?

e. Suppose ***Virtual Assist.com's*** outstanding debt had not been recently traded; what other methods could be used to estimate the cost of debt?

2. a. What is your estimate of the cost of preferred stock?

b. ***Virtual Assist.com's*** preferred stock is more risky to investors than its debt, yet you should find that its *before‑tax* yield to investors is lower than the yield on ***Virtual Assist.com's*** debt. Why does this occur? Is this evidence of an inefficient market for securities? Why or why not.

3. a. Why is there a cost associated with retained earnings?

b. What is ***Virtual Assist.com's*** estimated cost of retained earnings using the CAPM approach?

c. Why might one consider the T‑bond rate to be a better estimate of the risk‑free rate than the T‑bill rate? Can you think of an argument that would favor the use of the T-bill rate?

d. Would ***Virtual Assist.com's*** historical beta be a better or a worse measure of its future market risk than the historical beta for an average NYSE company would be for its (the average NYSE company’s) future market risk? Explain your answer.

e. 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.