1. (9 Points Total, 3 points each). The Mountain Fresh Company had earnings per share (EPS) of $6.32 in 2005 and $11.48 in 2010. The company pays out 30 percent of its earnings as dividends per share (DPS), and the company’s stock price is currently $37.50 (in 2010).

(a) Calculate the growth rate in dividends (g) over this 5-year period.

|  |  |
| --- | --- |
| **Period** | **Dividends** |
| 2010 | $11.48 |
| 2005 | $6.32 |
| **Growth rate** | **12.68% =((11.48/6.32)^(1/5)) – 1** |

Dividend Growth Rate (g) = \_\_\_\_\_12.68%\_\_\_\_\_\_\_\_\_\_\_\_.

(b) Calculate the expected dividend per share next year (i.e., what is D1, assuming the earnings and dividends of Mountain Fresh growth at a constant rate).

Expected Dividend Next Year (D1) = \_\_\_\_11.48\*(1+12.68%)=12.93566, $12.94

(c) Based on the information given above, what is the cost of retained earnings common equity (rs) for Mountain Fresh Company?

|  |  |
| --- | --- |
| Market price | $37.50 |
| Growth rate | 12.68% |
| Dividend | $12.94 |
| **Cost of retained earnings** | **% =growth rate + (dividend/market price)**  **=(12.68%+(12.94/37.5))** |

Cost of Retained Earnings (rs) = \_\_\_\_\_\_\_\_\_\_\_47.19%\_\_\_\_\_\_\_.

2. (12 Points Total, 3 points each). Washburn Ltd. is contemplating two mutually exclusive

capital budgeting projects. The following set of expected after-tax cash flows are presented below, and the firm’s cost of capital (WACC) is 13 percent (WACC = 0.13). Assume the capital

projects have zero salvage value at the end of Year 4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | CF0 | CF1 | CF2 | CF3 | CF4 |
| Project A | -$500 | $200 | $200 | $300 | $100 |
| Project B | -$500 | -$400 | $500 | $1,000 | $100 |

(i) What is the regular payback period (PP), in years, for each project?

PPA =

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| N | 0 | 1 | 2 | 3 | 4 |
| Cash Flow | ($500) | $200 | $200 | $200 | $100 |
| **Regular Payback Period** | N/A | N/A | N/A | 2.50 | **N/A** |

PPB =

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| N | 0 | 1 | 2 | 3 | 4 |
| Cash Flow | ($500) | ($400) | $500 | $1,000 | $100 |
| **Regular Payback Period** | N/A | N/A | N/A | 2.40 | **N/A** |

(ii) Using the firm’s 13 percent cost of capital, what is the net present value (NPV) for each project? Since these projects are mutually exclusive, which (if any) of these projects should Washburn accept?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0.13 | ($500) | $200 | $200 | $300 | $100 |
|  | ($500) | ($400) | $500 | $1,000 | $100 |
|  |  |  |  |  |  |
| A | $91 |  |  |  |  |
| B | $258 |  |  |  |  |
|  |  |  |  |  |  |

NPVA = \_\_\_\_\_\_\_\_\_$91\_\_\_\_\_\_. NPVB = \_\_\_\_\_\_$258\_\_\_\_\_\_\_\_\_\_\_\_.

(iii) What is the present value of costs (PVCOSTS) and the terminal value (TV) for each project?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 0.13 | ($500) | $200 | | $200 | $300 | $100 |
|  | ($500) | ($400) | | $500 | $1,000 | $100 |
|  |  |  | |  |  |  |
| A | $91 |  | |  |  |  |
| B | $258 |  | |  |  |  |
|  |  |  | |  |  |  |
| A | 2.2966% |  | |  |  |  |
| B | 2.8465% |  | |  |  |  |
| A |  |  | | ($594.89) |  |  |
| B |  |  | | ($1,487.24) |  |  |
| A | 2.2966% | |
| B | 2.8465% | |

PCCOSTS-A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. PCCOSTS-B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

TVA = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. TVB = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(iv) Without calculating a specific value, based on your answer in part (iii) above, which project would have the greater modified internal rate of return (MIRR) and briefly explain.3a. (10 Points total, 5 points each). A $1,000 par value bond pays interest of $35 every six months and will mature in 13 years. If your nominal annual required rate of return is 9 percent (with semi-annual compounding), how much should you be willing to pay for this bond today (VB) ?

VB = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3b. In order to accurately assess the capital structure of a firm, it is necessary to convert its

balance sheet figures to a market value basis. KJM Corporation's balance sheet as of today,

March 20, 2011, is as follows:

Long-term debt (bonds, at par) $10,000,000

Preferred stock 2,000,000

Common stock ($10 par) 10,000,000

Retained earnings 4,000,000

Total debt and equity $26,000,000

The bonds have a 4 percent coupon rate, payable semiannually, and a par value of $1,000. They

mature on March 20, 2021. The yield to maturity is 12 percent, so the bonds now sell below par.

What is the total current market value of the firm's debt?

|  |  |  |
| --- | --- | --- |
|  | **Book** | **Market values** |
| Debt | $20,000,000 **(A)** | $18,000,000 |
| Equity | $30,000,000 | $45,000,000 **=$4.5 \* 10,000,000** |
| **Total** | **$50,000,000 (B)** | **$63,000,000** |

Total Current Market Value of Debt = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4a. (4 Points). Cartwright Brothers’ stock is currently selling for $24.75 a share. The stock is expected to pay a $1.55 dividend at the end of the year. The stock’s dividend is expected to grow at a constant rate of 9 percent a year forever. The risk-free rate (rRF) is 6 percent and the market risk premium (RPM) is 8 percent. What is the stock’s beta?

Beta = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4b. (4 Points). Quigley Inc.'s bonds currently sell for $1,080 and have a par value of $1,000. They pay a $100 annual coupon and have a 15-year maturity, but they can be called in 5 years at $1,125. What is their yield to maturity (YTM)?

Yield to Maturity (rd) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5a. (9 Points Total, 3 points each). Bruner Breakfast Foods’ (BBF) balance sheet shows a total of $20 million long-term debt with a coupon rate of 8.00%. The yield to maturity on this debt is 10.00%, and the debt has a total current market value of $18 million. The balance sheet also shows that that the company has 10 million shares of stock, and total of common equity (common stock plus retained earnings) is $30 million. The current stock price is $4.50 per share, and stockholders' required rate of return, rs, is 12.25%. The company recently decided that its target capital structure should have 50% debt, with the balance being common equity. The tax rate is 40%.

a, Calculate BBF’s WACC on a Book Value Basis = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5b. Calculate BBF’s WACC on a Market Value Basis = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5c. Calculate BBF’s WACC on a Target Value Basis = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.