1. The XYZ Co. is assessing its current capital structure and its implications for the welfare of its security holders. XYZ currently is financed entirely with common stock, of which 1,000 shares are outstanding. Given the risk of the underlying cash flows (EBIT) generated by XYZ, investors currently require a 20% return on the XYZ common. The company pays out all expected earnings as dividends to common stockholders, and these expected earnings are based on the expected operating earnings (EBIT) generated by the firm’s assets. XYZ estimates that operating income may be either 1,000, 2,000 or 4,200 with respective probabilities of .1, .4 and .5 depending on future economic conditions. Further, the firm expects to produce a level stream of EBIT in perpetuity. Assume that the corporate and personal tax rate is equal to zero.

(a) Given the above facts, compute
   i. the value of the firm,
   ii. the market value of a common share,
   iii. the expected earnings per share of common,
   iv. the return on the common shares under each economic scenario, and
   v. the firm’s average cost of capital.

(b) The president of XYZ has come to the conclusion that shareholders would be better off if the company had equal proportions of debt and equity. He therefore proposes to issue $7,500 of debt at an interest rate of 10% and use the proceeds to repurchase 500 shares of common. Using the arguments of *Modigliani and Miller* (MM) analyze this proposition by computing
   i. the new value of the firm,
   ii. the value of debt,
   iii. the value of equity,
   iv. the price of one common share,
   v. the required rate of return on equity ($\bar{r}_e$), and
   vi. the firm’s average cost of capital.