Part I. Numerical questions

1. You are selling a tractor for $10,000. The buyer offers to pay $3,000 now, $2,500 next year, $1,500 in two years, and $3,000 in three years. What is the highest discount rate under which you would still be willing to you accept the offer?
2. A new hog investment requires an initial outlay of $100,000 and is expected to yield a stream of uniform profits over the investment’s 10-year planning horizon. Assuming no salvage value, no taxes, and a 10 percent discount rate, how high must annual profits be to justify pursuing this investment?
3. Suppose the following net cash flows are recorded for the preceding year:

Operating activities $150,000

Investing activities ($50,000)

Financing activities $35,000

Determine the beginning-of-year cash balance, if the ending balance is $30,000.

1. What is the average cost of capital when the after-tax cost of debt is 12%, the cost of equity is 8%, and the leverage (i.e. debt/equity) is equal to 2?
2. Pasture land is selling for $3,000 per acre. If the value increases 4% per year, what will the value be in 30 years?
3. What is the expected value of an expansion with the following forecasted net present values and probabilities?

|  |  |  |
| --- | --- | --- |
| Forecast | V1 | Pi |
| Optimistic  Most Likely  Pessimistic | $23,000 10,000  -2,000 | 0.25  0.45  0.30 |

Part II. Analytical Reasoning

1. If you pursue an investment opportunity today, you will have invested all your savings, and you will not be able to pursue another investment opportunity for the next few years. Describe how would you use the tools and methods you learned in APEC3501 to make a reasonable decision. Note: We did not cover this material rigorously in lectures, I am looking for a well-reasoned common sense answer.
2. Under which conditions would higher leverage results in lower equity growth rate?
3. Consider two dairy farms which have the same production model, same number of milking cows, same milk price, same revenue and cost of production. They both at present time have have identical balance sheets. Today, they both decide they need to control supply of their livestock feed. The first farm decides to contract with neighboring farmers, which gives them certainty that the neighbors will grow exactly the kind of feed the farm needs. The agree to pay the neighbors market price for feed. The second farm decides to buy land from neighboring farmers, taking a loan to finance the land purchase. Describe how these different approaches to land might impact their profitability, liquidity and solvency over the next few years.
4. What are five C’s of credit? As you describe each dimension, illustrate how ignoring any of the five dimensions may lead to making a loan that ends in default.