**Chapter One – Michael Baye**

**The Fundamental Of Managerial Economics**

**CONCEPTUAL AND COMPUTATIONAL QUESTIONS**

1. Levi Strauss & Co. paid $46, 532 for a 110-year-old pair of Levi’s jeans-the oldest known pair of blue jeans-by outbidding several other bidders in an eBay Internet auction. Does this situation best represent producer-producer rivalry, consumer-consumer rivalry, or producer-consumer rivalry? Explain
2. What is the maximum amount you would pay for an asset that generates an income of $150,000 at the end of each of five years if the opportunity cost of using funds is 9 percent?
3. Suppose that the total benefit and total cost from an activity are, respectively, given by the following equations: B*(Q) =150 + 28Q – 5Q² and C(Q) = 100 + 8Q. (Note: MB(Q) = 28 – 10Q and MC(Q)* = 8.)
4. Write out the equation for the net benefits.
5. What are the net benefits when *Q = 1 and Q = 5*
6. Write out the equation for the marginal net benefits.
7. What are the marginal net benefits when *Q = 1? Q = 5*?
8. What level of Q maximizes net benefits?
9. At the value of that maximizes net benefits, what is the value of marginal net benefits?
10. A firm’s current profits are $550,000. These profits are expected to grow indefinitely at a constant annual rate of 5 percent. If the firm’s opportunity cost of funds is 8 percent, determine the value of the firm:
11. The instant before it pays out current profits as dividends.
12. The instant after it pays out current profits as dividends.
13. What is the value of a preferred stock that pays a perpetual dividend of $75 at the end of each year when the interest rate is 4 percent?
14. Complete the following table and answer the accompanying questions.
15. At what level of the control variable are net benefits maximized?
16. What is the relation between marginal benefit and marginal cost at this level of the control variable?
17. It is estimated that over 90,000 student will apply to the top 30 M.B.A. programs in the United States this year?
18. Using the concept of the present value and opportunity cost, explain when it is rational for an individual to pursue a M.B.A. degree.
19. What would you expect to happen to the number 0f applicants if the starting salaries of managers with M.B.A. degrees remained constant but salaries of managers without such degrees increased by 15 percent? Why?
20. Jaynet spend $20,000 per year on painting supplies and storage space. She recently received two job offers from a famous marketing firm-one offers was for $100,000 per year, and the other was for $90,000. However, she turned both jobs down to continue a painting career. If Jaynet sells 20 paintings per year at a price of $10,000 each :
21. What are her accounting profits?
22. What are her economic profits?

**PROBLEM AND APPLICATIONS**

1. You’ve recently learned that the company where you work is being sold for $275,000. The company’s income statement indicates current profits of $10,000, which have yet to be paid out as dividends. Assuming the company will remain a “going concern” indefinitely and that the interest rate will remain constant at 10 percent, at what constant rate does the owner believe that profits will grow? Does this seem reasonable?
2. You are in the market for a new refrigerator for your company’s lounge, and you have narrowed the search down to two models. The energy efficient model sells for $500 and will save you $25 at the end of each of the next five years in electricity costs. That standard model has features similar to the energy efficient model but provides no future saving in electricity costs. It is priced at only $400. Assuming your opportunity costs of funds is 5 percent, which refrigerator should you purchase?
3. You are the human resources manager for a famous retailer, and you are trying to convince the president of the company to change the structure of employee compensation. Currently, the company’s retail sales staff is paid a flat hourly wage of $18 per hour for each eight- hour shift worked. You propose a new pay structure whereby each salesperson in a store would be compensated $8 per hour for each eight-hour, plus five-tenths of 1 percent of the store’s daily profits. Assume that, when run efficiently, each store’s maximum daily profits are $40,000. Outline the arguments that support your proposed plan.
4. Tara is considering leaving her current job, which pays $56,000 per year, to start a new company that manufactures a line of special pens for personal digital assistants. Based on market research, she can sell about 160,000 units during the first year at a price of $20 per unit. With annual overhead costs and operating expenses amounting to 3,160,000, Tara expect a profit of 25 percent. This margin is 6 percent larger than of her largest competitor, Pens, Inc.
5. If Tara decides to embark on her new venture, what will her accounting costs be during the first year of operation? Her implicit costs? Her opportunity costs?
6. Suppose that Tara’s estimated selling price is lower than originally projected during the first year. How much revenue would she need in order to earn positive accounting profits? Positive economic profits?
7. Approximately 14 million Americans are addict to drugs and alcohol. The federal government estimates that these addict cost the U.S economy $300 billion in medical expenses and lost productivity. Despite the enormous potential market, many biotech companies have shied away from funding research and development (R&D) initiatives to find a cure for drug and alcohol addiction. Your firm-DrugAbuse Sciences (DAS)- is a notable expectation. It has spent $170 million to date working on a cure, but is now at crossroads. It can either abandon its program or invest another $30 million today. Unfortunately, the firm’s opportunity cost of funds is 7 percent and it will take another five years before final approval from the Federal Drug Administration is achieved and the product is actually sold. Expected (year-end) profits from selling the drug are presented in the accompanying table. Should DAS continue with its plan to bring the drug to market, or should it abandon the project? Explain.
8. As a marketing manager for one of the world’s largest automakers, you are responsible for the advertising campaign for a new energy-efficient sports utility vehicle. Your support team has prepared the following table, which summarizes the (year-end) profitability, estimated number of vehicles sold, and average estimated selling price for alternative levels of advertising. The accounting department projects that the best alternative use for funds used in the advertising campaign is an investment returning 10 percent. In light of the staggering cost of advertising (which accounts for the lower projected profits in year 1 and 2 for the high and moderate advertising intensities), the value of the firm. Do you agree? Explain.
9. The head of accounting department at a major software manufacturer has asked you to put together a pro forma statement of the company’s value under several possible growth scenarios and the assumption that the company’s many divisions will remain a single entity forever. The managers is concerned that, despite the fact that the firm’s competitors are comparatively small, collectively their annual revenue growth has exceeded 50 percent over each of the last five years. She has requested that the value projections be based on the firm’s current profits of $2.5 billion (which have yet to be paid out to stockholders) and the average interest rate over the past 20 years (8 percent) in each of the following profit growth scenarios:
10. Profits grow at an annual rate of 10 percent. (This one is tricky)
11. Profits grow at an annual rate of 3 percent.
12. Profits grow at an annual rate of 0 percent.
13. Profits grow at an annual rate of 3 percent.
14. Starting in 2002, the maximum allowable contribution to IRAs will increase to $3,000 per year, gradually increasing to $5,000 by 2008. Thereafter, maximum contributions will be indexed by inflation and will increase in retirements of $500. Suppose one of your clients is four years away from retirement and has only $1,500 in pretax income to devote to either a Roth or a traditional IRA. The traditional IRA permits investors to contribute the full $1,500 since contributions to this accounts are tax-deductible, but they must pay taxes on all future distributions. In contrast, contributions to a Roth IRA are not tax-deductible, meaning that at a tax rate of 25 percent, an investor is able to contribute only $1,125 after taxes; however, the earnings of a Roth IRA grow tax-free. Your company has decided to waive the one-time set-up fee of $25 to open a Roth IRA; however, investors opening a traditional IRA must pay the $25 set-up fee. Assuming that your client anticipates that her tax rate will remain at 17 percent in retirement and will earn a stable 8 percent return on her investment, will she prefer a traditional or a Roth IRA.
15. You are the manager in charge of global operation at BankGlobal-a large commercial bank that operates in a number of countries around the world. You must decide whether or not to lunch a new advertising campaign in the U.S market. Your accounting department has provided the accompanying statement, which summarizes the financial impact of the advertising campaign on U.S. operations, and she indicated that her unit would lose $6 million if the U.S advertising campaign were launched. Your goal is to maximize BankGlobal’s value. Should you launch the new campaign? Explain.
16. According to the Wall Street Journal, merger and acquisition activity in the first quarter of 2004 rose to $5.3 billion-an investment level not seen since the second quarter of 2001. Approximately three-fourths of the 78 first-quarter deals occurred between information technology (IT) companies. The largest IT transaction of the quarter was EMC’s $625 million acquisition of VMWare. The VMware acquisition broadened EMC’s core data storage device business to include software technology enabling multiple operating system-such as Microsoft’s Windows, Linux, and Novell Inc.’s netware-to simultaneously and independently run on the same Intel-based server or workstation. Suppose that at the time of the acquisition the weak economy led many analysts to project that VMWare’s profits would grow at a constant rate of 1 percent for the foreseeable future, and that the company’s annual net income was 50.72 million. If EMC’s estimated opportunity cost of funds is 10 percent as an analyst how would you view the acquisition? Would your conclusion change if you knew that EMC had credible information that the economy was on the verge of an expansion period that would boost VMWare’s projected annual growth rate to 3 percent for the foreseeable future? Explain.
17. Brazil points to its shrimp-farming industry as an example of how it can compete in world markets. In 1998, Brazil exported a meager 400 tons of shrimp. Today, Brazil exports more than 58,000 tons of shrimp, with approximately one-third of that going to the United States. Brazilian shrimp farmers, however, potentially face a new challenge in the upcoming years. The Southern Shrimp Alliance-a U.S. organization representing shrimpers-field a dumping complaint alleging that Brazil and five other shrimp-producing countries are selling shrimp below “fair market value”. The organization is calling for the United States’ to impose a 300 percent tariff on all shrimp entering the United States’ borders. Brazilian producers and the other five countries named in the complaint counter that they have a natural competitive advantage such as lower labor costs, availability of cheapland, and a more favorable climates, resulting in a higher yield per acre and permitting three harvests per year. In what many see as a bold move, the American Seafood Distributors Association-an organization representing supermarkets, shrimp processors, and restaurant-has supported Brazilian and other foreign producers, arguing that it is the Southern Shrimp Alliance that is engaging in unfair trade practices. Describe the various rivalries depicted in this scenario, and then use the five forces framework to analyze the industry.
18. You are the manager of Local Electronics shop (LES), a small brick-and-mortar retail camera and electronics store. One of your employees proposed a new comparison Web site that allows consumers to view the prices of dozens of retailers selling the same items. Would you expect this strategy to enable LES to achieve sustainable economic profits. Explain?
19. Two months ago, the owner of a car dealership (and a current football star) significantly changed his sales manager’s compensation plan. Under the old plan, the manager was paid salary of $6,000 per month; under the new plan, she receive 2 percent of the sales price of the each car sold. During the past two months, the number of cars sold increased by 40 percent, but the dealership’s margins (and profits) harder bargains and I have had authorize significantly lower to remain competitive. “ What advice would you give the owner of the dealership”?