**MBA 8040: Profit Models**

**Exercises**

**Exercise I**

1. You own a motel with 100 rooms. Fixed daily cost is $1000 (mortgage, salaries, etc.) and Variable Cost is $10/room rented (cleaning). If you charge $50/room per night, what is the breakeven point?
2. You are considering taking a loan to make improvements to your motel. The added loan payment would increase your fixed costs to $1800 per day, with variable costs remaining at $10/room rented. You will be able to charge $70/room per night, given the improvements to the motel. Should you take the loan? At what utilization of capacity will you be indifferent between the current operation at $50 and the improved motel at $70 per night? (This *point of indifference* is also called the *Crossover Point*).
3. You have in the past tried varying the price of the rooms. Based on the price (P), you discovered through regression that the number of rooms demanded (D) varied as follows:

D = 200 – 3P

Based on this information, assuming FC = $1000 and VC = $10/unit, what is the best price to charge?

**Exercise 2**

1. A car manufacturer assembles gasoline powered cars at a facility that has a fixed cost of $2,000,000 per day (cost of the facility, overhead). The variable cost is $25,000 per car produced (labor and purchased parts). The cars are sold to dealers at an average price of $ 30,000. To produce Electric Cars, the fixed cost is $2,500,000 per day and the variable cost is $27,000 per car. In order to compete with gasoline cars, assume the electric vehicle must be sold at the same price, $30,000. What is the crossover point for these two types of vehicles?
2. You work in the government and believe that it is necessary to encourage car makers to produce more electric cars. What are various ways of doing so?
3. How much money would the government have to give the automaker per electric car sold (assuming that strategy is chosen) to create a crossover point at a production level of 500 cars per day?