Econ 101 Discussion Section-Handout 13

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1 Review

- Monopoly:
  - Marginal Revenue without calculus
  - Natural Monopoly:
    * There are some special cases when a monopoly is not a bad idea
    * A natural monopoly is a monopoly in an industry in which it is most efficient (involving the lowest long-run average cost) for production to be permanently concentrated in a single firm rather than contested competitively.
  - Price discrimination: What are the main differences between the three cases
    * First degree involves knowing perfectly how much a consumer is willing to pay for a good
    * Second degree implies different prices for different quantities. They cannot differentiate between consumers
    * Third degree takes into account specific characteristics of a subgroup of the population
  - Monopolistic Competition
    * In reality we many markets with differentiated products
    * Each firm behaves as a Monopoly, however in the long run they earn zero profits due exit and entry
  - Oligopoly
    * Few firms with market power

2 Price discrimination, natural monopoly

1. Suppose a monopoly faces a market demand curve of $P = 42 - Q$ The Marginal cost faced by him is given by the equation : $MC = Q$
   (a) Derive the equation for marginal revenue curve.
   (b) Find the profit maximizing level of production for this monopolist.
   (c) What should be the price charged by the monopolist ?
   (d) What is the socially optimal price ?
   (e) What's this monopolist's total revenue?
   (f) Graph the producer surplus, the consumer surplus, and the dead-weight loss for the market with the monopolist.
   (g) Compare the Social Surplus had this industry been perfectly competitive.

2. Orange, the monopoly firm in computer market having a constant marginal cost 30. There are two types of consumer in the market, corporate user and personal user. The demand curves are given by the following equations Corporate users: $Q = 50 - P/3$ Personal users: $Q = 110 - P$

   (a) Suppose Orange can implement third degree price discrimination. Derive the profit maximization prices, consumer surplus and Orange's profit.

   (b) Derive the aggregated market demand. Then, derive the profit maximization price, consumer surplus and Orange's profit.

3. Consider the monopolistic company in a car market Toyotaka. The Toyotaka's variable cost and marginal cost are given by $VC = 10q$ and $MC = 10$. In addition to that, Toyotaka needs to build a plant in order to operate. Building a plant costs the firm 7000.

   (a) Derive the total cost for the firm. Does the technology of the firm exhibit economy of scale?

   (b) The demand curve for car is given by $Q = 210 - P$. (b) Derive MR and find monopoly price, quantity and profit Find the price, quantity and profit under marginal cost regulation. The marginal cost regulation is the regulation under which the firm charges price equal to average marginal cost.