EC3322
Industrial Organization I
Semester 1, 2015-2016
Tutorial #2

You will receive full credit if you present your attempt at the solution during tutorial, whether or not you have the correct answer. Also, feel free to discuss the questions and answers with other students who have not yet attended tutorial. However, I request that you do not ask former students of this module or current students who attend an earlier tutorial than you for the answers before your own tutorial has taken place.

1. (∗) Find a real-world example of price discrimination. Tell us the degree of price discrimination and describe the method used to implement the price discrimination and who the targeted consumers are.

2. (Final Semester 1, 2013-14) Suppose a monopolist faces the demand function $P = 40 - 3q$. The cost function is $C(q) = q^2$. Compute the monopoly price, quantity, and Lerner index.

3. (Midterm 2011) The demand curve for a certain good is $P = 100 - Q$. The marginal cost for a monopolist is $MC(Q) = Q$, for $Q \leq 30$. The marginal cost is infinite for $Q > 30$. That is, the maximum that can be supplied in this market is $Q = 30$.

   (a) What price will the profit-maximizing monopolist set?

   (b) What is the deadweight loss due to monopoly in this market?

   (c) Draw a graph of the monopolist's problem indicating the optimal price and output.

4. (Midterm Sem 2, 2013-14. Note: demand and cost have been changed.) This question considers a dominant firm model with entry. Aggregate market demand is $Q = 80 - P$.

   (a) Each fringe firm has a cost function $C(q) = 25 + 20q + q^2$. What is the long run supply function of a fringe firm?

   (b) Graph long-run *aggregate* supply of the fringe.

   (c) Graph market demand and the dominant firm's residual demand.

(d) Suppose that the dominant firm's cost function is $C(q) = 20q + \frac{1}{2}q^2$. What is the optimal output of the dominant firm? How much does the fringe supply? What is the equilibrium price?

(e) Graph your answers from part (d).

To think about: how can you alter this question to examine how equilibrium outcomes change as firms enter the market over time? That is, can you show how the outcomes change as the market moves from the short run to the long run?

5. (Midterm Sem 2, 2013-14) A monopolist sells a product to two groups: people age 65 and older, denoted S for seniors, and everyone else, denoted E. The total demand for group E is $Q_E = 100 - 2P$ and total demand for group S is $Q_s = 80 - 2P$. The cost function of the monopolist is $C(Q) = 5Q$.

   Assume that the monopolist cannot tell the groups apart.

   (a) What is aggregate demand? What is marginal revenue?

   (b) Find the optimal price and quantity.

   Assume now that the monopolist can determine each person's age by looking at their driver's license or IC and can thus apply third-degree price discrimination.

   (c) What price does the monopolist charge group E?

   (d) What price does the monopolist charge group S?