

SECTION NOTES 19

Covering material from Lecture on March 21st

CLASS OUTLINE

1. Price Discrimination
2. The Two-Part Tariff

1 Price Discrimination

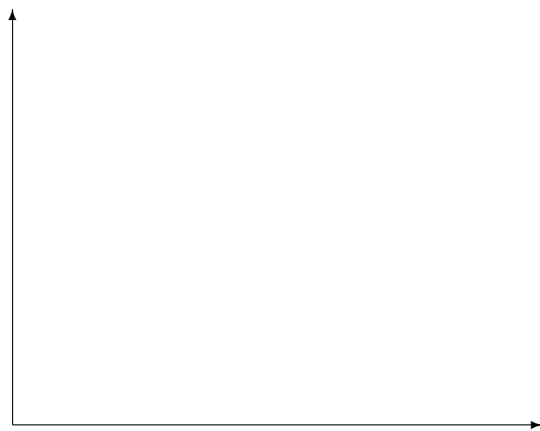
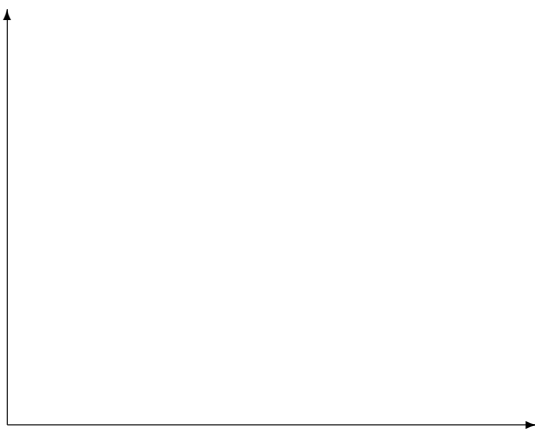
What happens if firms can now change their price depending on who they are selling to? This can be done in any market where consumer surplus exists. Price discrimination is in essence a firm's attempt to extract consumer surplus.

First-Degree Price Discrimination

What is the Marginal Revenue curve when a firm can perfectly price discriminate?

Second-Degree Price Discrimination

Now, the firm wants to charge prices based on quantities purchased.



Third-Degree Price Discrimination

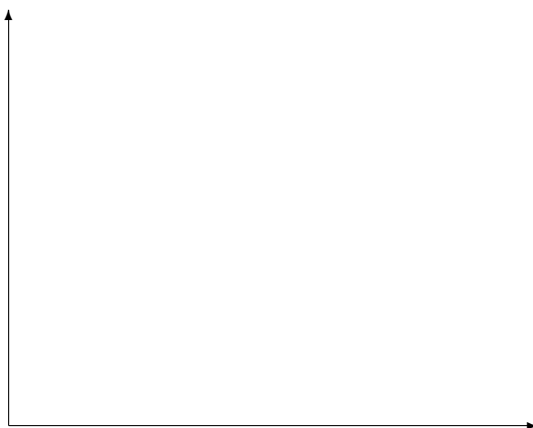
Now, we want firm's to be able to separate types of consumers. This means that the consumers must be differentiable, and we also have to rule out arbitrage.

What is the firm's new problem, and how do we solve it? Note, $Q = Q_1 + Q_2$.

$$\max_{Q_1, Q_2} \pi(Q_1 + Q_2) = P_1(Q_1)Q_1 + P_2(Q_2)Q_2 - C(Q)$$

2 The Two-Part Tariff

If all consumers are identical, sometimes a firm can break up the price of their good into two parts. This is done by charging a usage fee along with an entry fee. This is easily seen graphically.



Problem: (P&R, Chapter 11, Exercise 5)

A monopolist is deciding how to allocate output between two geographically separated markets. Demand for the two markets are:

$$P_1 = 15 - Q_1$$

$$P_2 = 25 - 2Q_2$$

The monopolist's total cost is $C = 5 - 3(Q_1 + Q_2)$. What are price, output, profits, marginal revenues, and deadweight loss (i) if the monopolist can price discriminate? (ii) if the law prohibits charging different prices in the two regions?

Problem:(P&R, Chapter 11, Exercise 10)

A tennis club has two types of players, whose demands for court hours per week are given by:

$$\begin{aligned}Q_1 &= 10 - P, \\Q_2 &= 4 - 0.25P,\end{aligned}$$

Assume that there are 1000 players of each type. The marginal cost of court time is zero, and fixed costs are \$10,000 per week.

- a. If the owner wanted only type 1 players, how should she set the *annual* membership dues and court fees to maximize profits? What would weekly profits be?
- b. Is profit being maximized? How do you know, and if not, what annual dues and court fees would maximize weekly profits? What would these profits be?
- c. Assume now that the number of type 1 players increases to 3000, but stays at 1000 for type 2 players. Would it still be profitable to cater to type 2 players? What would be the profit-maximizing annual dues and court fees? What would weekly profits be?