

Practice problem set 16

Price discrimination

This problem set constitutes recommended material for the relevant lab. The choice of tasks to be presented instructionally in every lab is in the discretion of the individual teacher. Students are expected to work on practice problems, however, are not required to submit written solutions. It is non-negotiable policy in this course to not provide hand-outs with the solutions of practice problem sets.

1. A monopolist with constant average cost c , faces 2 identifiable groups of customers, where demands are $p_1 = a - bq_1$, $p_2 = d - eq_2$.

- (a) If $a = d$ and $b \neq e$ should the monopolist price discriminate?
(b) If $a \neq d$ and $b = e$ should the monopolist price discriminate?

From a future exam

2. A monopolistic firm sells its product to two types of customers, business customers and other customers. Its total costs are given by $TC = 20 + 2Q$, where Q denotes total output. The total demand of business customers is given by $Q^B = 14 - p$. The total demand of other customers is given by $Q^T = 5 - 0.5p$.

- (a) Suppose that third-degree price discrimination between the two groups is possible. Calculate the prices that the firm will charge each group, the amount it will sell to each group, the consumer surplus of each group, and the firm's total profit.
(b) Now suppose that first-degree (perfect) price discrimination is possible within each group. Calculate the amounts the firms will sell to each group and the firm's total profit.
(c) The government now requires the firm to charge the same price to all its customers. Discuss the effects of this on the consumer surplus of business customers, the consumer surplus of other customers, and the firm's profit as compared to the situation under (a).

UoL: 2002 za / 2007 za

3. As the owner of the only tennis club in an isolated island, you must decide on annual membership fees and fees for court times. There are two types of tennis players. "Serious" players have demand $Q_1 = 6 - P$, where Q_1 is court hours per week and P is the court fee per hour for each individual player. There are also "occasional" players with demand $Q_2 = 3 - P/2$. Assume there are 1000 players of each type. Because you have plenty of courts, the marginal cost of court time is zero. You have fixed costs of 5,000 per week. Serious and occasional players look alike, so you must charge them the same prices.

- (a) Suppose that to maintain a "professional" atmosphere, you want to limit membership only to serious players. How should you set the annual membership fee and the court fee (assuming there are 52 weeks per year)? What will be your profit?
(b) A friend tells you that you could make greater profits by encouraging both types of players to join. How would you set the annual membership fee and the court fee in this case? Is your friend right?

UoL: 2003 za / 2010 zb

4. A firm with market power knows that there are two different types of consumers wishing to buy its product. The firm also has information about the demand function of each type. Can the firm use linear prices (i.e. without fixed fees) to successfully price discriminate if the firm knows which type each consumer is? Why or why not? What if the firm does not know which type each consumer is but knows the percentages of consumers in the market that are of a particular type? Explain your answer.

UoL: 2008 zb

5. "Third degree price discrimination can lower both a monopolist's profit and consumer surplus compared to uniform pricing." Do you agree with the statement? Explain your answer.

UoL: 2013 zb

6. Consider the consumers in a monopoly market, where the monopolist decided to discontinue single price setting and apply first-degree price discrimination. Describe the effect of the change in pricing policy on the consumers.

End of 3rd Module Examination – 2014