



Lab Problem Set 4

Pricing with Market Power

This problem set is intended to support the presentation by your teacher in the class. You are not required to submit written solutions to this problem set. It is highly recommended that you work on these problems at home since you will be expected to know how to solve similar tasks in the controlled works.

Problem 1

Sergey and Nastya consider joining the Spicy-Latin-dancing school of dancing. The owner of the school, Katya, offers lessons in two different dance styles: salsa and bachata. Katya has the following incomplete table of information on the reservation values for the two potential customers.

	Salsa	Bachata
Sergey	300	x
Nastya	y	400

Find the necessary conditions on x and y , so that bundling will be the most profitable option for Katya and both potential students will be served.

Problem 2

Consider a company with a cost function

$$cost = C + cq.$$

The company faces 2 different groups of consumers where demands are

$$p_H = H - hq_H, \quad p_L = L - lq_L.$$

- Derive the conditions on H, h, L, l, C, c , so that the company would prefer to conduct price discrimination charging $p_H > p_L$ rather than charging a single price p .
- Can you specify conditions so that $p_H > p > p_L$?

Problem 3

The price of generic raw espresso coffee is 11 rubles per dosage. The price of the specialized espresso cartridges that only the Lacafessimo espresso machine uses, cost 19 rubles per dosage. Consider the price of the Lacafessimo espresso machine compared to the price of a generic espresso machine of similar quality. Is the price of Lacafessimo machine expected to be higher, lower or similar? Use economic reasoning and terminology in your answer.

Problem 4

You are hired as Chief Economist by a firm which is interested to charge its customers with a two-part tariff. You order a survey for the demand and you discover that your potential customers have a linear demand of the form $q = a - 0.53p$. Your chief econometrician tells you that the average for a is 10.233 with a particularly small variance. What will your recommendation be on using the two-part tariff?

Problem 5

The local zoo asked you to consult them in setting admission prices. The zoo's managers recognize that there are two distinct demand curves for zoo admission. One demand curve

applies to ages 12 to 64, while the other is for children and senior citizens. The two demand curves are: $P_A = 9.6 - 0.08Q_A$ & $P_S = 4 - 0.05Q_S$, where A indexes ages 12 – 64 and S indexes the remaining ages. Crowding is not a problem at the zoo, so that the managers consider marginal cost to be zero.

- (a) If the zoo decides to price discriminate, what are the profit maximizing price and quantity in each market? Calculate total revenue in each sub-market.
- (b) What is the elasticity of demand at the quantities calculated in (a) for each market. Are these elasticities consistent with your understanding of profit maximization and the relationship between marginal revenue and elasticity as they were presented in the lecture?

Problem 6

Imagine a market where the inverse demand is given by $P = 100 - Q$ and the inverse supply is given by $P = 20 + 3Q$. Calculate the equilibrium price and quantity, the deadweight loss and draw diagrams for each case above indicating the deadweight loss for each of the following markets:

- (a) Perfect competition
- (b) Monopsony
- (c) Monopoly
- (d) Compare the deadweight loss under monopsony and monopoly and explain the difference.