

Homework 10*

Due January 16, 2018

Homework will be collected at the end of the lecture on the day it is due. Submissions in any other time or manner will be ignored. The maximum score is 100. Unprofessionally looking papers or unnamed or unstapled sheets or improperly labelled questions or bad handwriting will result to a penalty up to 50% at the discretion of the grader. Plagiarism will be prosecuted and perpetrators will have to suffer an extra year of my lectures to graduate.

1. There are two types of consumers in the market: type 1 and type 2; and a monopolist who alone serves this market. Each consumer of type 1 has demand for the monopolist's service $q = 50 - p$. Each consumer of type 2 has demand $q = 120 - 2p$. There are 1000 consumers of type 1 and 1200 customers of type 2. Total cost function for the monopolist is $C = 5000 + 20q$.
 - (a) Find the total market demand. [10p]
 - (b) Find the profit and profit maximizing price if the monopolist cannot price discriminate. [20p]
 - (c) Find the profit and profit maximizing price if the firm can identify the type of each customer and set different prices. [20p]
 - (d) Compare profits in (b) and (c) and comment whether this is a general result or is it specific to this particular problem. [20p]

2. A monopolist with constant average cost c , faces two identifiable groups of customers, where demands are $p_1 = A - bq_1$, $p_2 = A - wq_2$, where A, b, w are all positive constants. Explain if the monopolist should price discriminate. [30p]

*Problems in this homework assignment (as 80% of problems in all previous assignments) are UoL level problems. If this homework seems to you 'hard' or it takes you more than two hours to solve, you must work harder on the course or else you will face a problem with the UoL exam.