STUDYDADDY

Get Homework Help From Expert Tutor

Get Help

Answer both (**2**) the questions below. You may work in groups of up to six (6) students; please ensure that everyone in the group is credited. Please hand in one assignment per group. Please show all work for full credit.

1. The city's Water and Sewer provider is a regulated natural monopoly that has a cost function,

$$C(Q, N) = 1,000 + 4N + 3Q,$$

where N is the number of households, and Q is the cubic inches of water consumed per day.

There are 50 high type consumers each with demand,

$$q_h = 8 - \frac{1}{2}p_h,$$

and 30 low type consumers with demand,

$$q_l = 4 - \frac{1}{4}p_l.$$

Each q_i is cubic inches consumed per household per day.

Start with the assumption that the monopolist is profit maximizing and is unconstrained (*i.e.* no regulation).

(a) What price would a uniform price monopolist charge? Calculate profit and deadweight loss.

(b) Find the two-part tariff schedule using the average demand (*i.e.* one entry fee and one per-unit fee for the aggregate demand function). Does anyone get excluded from the market? Calculate profit and deadweight loss.

(c) Find the profit-maximizing two-part tariff. Calculate profit and deadweight loss.

(d) Find a multi-part tariff such that the monopolist maximizes profits by offering a "menu" of prices: one price for a fixed amount of water, one two-part pricing schedule for a variable amount of water. Find the monopolist's profit.

Now assume a regulator wants to improve upon the efficiency loss.

(e) If the regulator forces marginal cost pricing to eliminate all deadweight loss, how large would the subsidy need to be such that the monopolist breaks even? Discuss the least inefficient way to raise subsidy revenue (from what type of markets?).

(f) If the regulator wants no deadweight loss (unit price of $3), what is the highest tariff they could permit to get all customers to buy? And the lowest? What would the monopolist's profit and consumer surplus be in both instances?

(g) Find a multi-part tariff a regulator would set up to maximize consumer surplus while allowing non-negative profit for the monopolist. Calculate consumer surplus.

STUDYDADDY

Get Homework Help From Expert Tutor

Get Help