Homework 5

Problem 1 The US Postal Service (USPS) has a government-sanctioned monopoly on first-class mail. In early 2008, it charged 41 cents for a stamp, which is probably not the profit-maximizing price, as the USPS's goal is, allegedly, to break even rather than to turn a profit. In 2007, the USPS allowed stamps.com to sell a sheet of twenty 41 cent stamps with customized photos for $18.99 (that's 94.95 cents/stamp, or a 232% markup). stamps.com keeps the extra beyond the 41 cents it pays USPS.

What is stamps.com's Lerner index? If stamps.com is a profit-maximizing monopolist, what elasticity of demand does it face for a customized stamp?

Problem 2 In 2005, Apple sold its 512MB iPod Shuffle for $99. According to iSuppli, Apple's per-unit cost of manufacturing the shuffle is $45.37. What is Apple's Lerner index? What is the elasticity of demand Apple faces?

Problem 3 The demand curve a monopoly faces is $P = 100 - Q$. The firm's cost curve is $c(Q) = 10 + 5Q$ (so $mc = 5$). What is the firm's profit-maximizing quantity and price? What is the firm's profit? What is the value of consumer surplus and deadweight loss? What is this monopolist's Lerner index?

Problem 4 The Albuquerque Isotopes, a minor league baseball team, have a stadium which seats 30,000 people. All seats are identical. The optimal ticket price is $5, yet this results in an average attendance of only 20,000 people.

a. Explain how it can be profitable to have 10,000 empty seats.

b. Next week the Isotopes play the Capital City Goofballs, who have offered to buy an unlimited number of tickets at $4 each, to be resold only in Capital City. How many tickets should be sold to Capital City to maximize the Isotopes' profit? 10,000? More than 10,000? Explain.

c. Given your answer to b, what price should the Isotopes charge their own fans? $4? $5? More?

Problem 5 True/false: a monopolist will increase its output if the government institutes a binding price ceiling. Explain why. If the government wants to set a price ceiling which maximizes total surplus, what price should it choose? (Hint: use a graph to help answer this question).

Problem 6 There are 10 households in Lake Wobegon, Minnesota, each with a demand for electricity of $Q = 50 - P$. Lake Wobegon Electric's (LWE) cost of producing electricity is $c(Q) = 500 + Q$.

a. If the regulators of LWE want to make sure that there is no deadweight loss in this market, what price will they force LWE to charge? What will output be in this case? Calculate consumer surplus and LWE's profit with that price.

b. If regulators want to ensure that LWE doesn't lose money, what is the lowest price they can impose? Calculate output, consumer surplus, and profit. Is there any deadweight loss?

c. It is suggested that each household be required to pay a fixed amount just to receive any electricity at all, and then a per-unit charge for electricity. Then LWE can break even while charging the price calculated in a. What fixed amount would each household have to pay for the plan to work?