

Econ 323

Mayer

## Homework #3

Due November 9<sup>th</sup> 2009

You can discuss the problems in groups, but you have to write up the answers individually.

**1.** (4 points) Name 3 examples of monopolies. List a product that maybe a substitute for the product of the respective monopoly.

**2.** (10 Points) The market for potatoes (measured in lbs) in Veggieland is characterized by two equations:

Supply:  $Q^s = 50 + 10p$

Demand:  $Q^D = 250 - 20p$

- a) Solve for the equilibrium price and quantity. Illustrate the market equilibrium using a graph.
- b) Calculate the producer and consumer surplus in the market for potatoes. Indicate the respective areas in your graph.
- c) Joe Asparagus is running for president of Veggieland. He proposes to subsidize the potato farmers. He suggests a payment to the farmers of \$5 for each lb of potatoes sold. Illustrate the effect of the subsidy in a graph. Calculate the market equilibrium (quantity and price) if our candidate gets elected and implements his plan.
- d) How do the producer and consumer surplus change due to this subsidy? Calculate the cost of the subsidy for the government.
- e) A major input in the production of potatoes is fertilizer. Use one (or more) graph(s) to illustrate the effects of the subsidy for potatoes on the market equilibrium in the fertilizer market.

3. (10 points) The government of Fruitland awards a license to sell Chocolate to a single company. The demand for chocolate in Fruitland is described by:

$$Q_d = 500 - \frac{1}{2}p, \text{ where } Q_d \text{ indicates the quantity demanded and } p \text{ the price.}$$

The costs associated with chocolate production are given by:

$$C(q) = 100 + q^2, \text{ where } C \text{ stands for the production cost and } q \text{ for the quantity produced.}$$

- a) Calculate the marginal revenue, the marginal cost and the average of the monopolist
- b) Draw a big graph that shows the demand curve, the marginal revenue curve, the marginal cost curve, and the average cost curve. Label all curves carefully.
- c) On your graph indicate the quantity that maximizes the profit of the monopolist and the price charged by the monopolist.
- d) Calculate the consumer surplus from chocolate in Fruitland.
- e) You have heard that the president of Fruitland will give the chocolate production license to the person who makes the highest donation to his re-election campaign. How much would the highest bidder be willing to give to the re-election campaign?

4. (1 Point) Staple all the sheets with your answers together and write your name on the first page.

**Total: 25 Points**