Principles of Microeconomics
ECON 1101 - Spring 2010

Department of Economics
University of Minnesota

Recitation Questions - February 17th

Lectures: M W F 9:05pm - 9:55pm (Rm. WilleyH 175)  Instructor: Minesh D. Amin
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Problem 1.

(1) Define a market equilibrium.

(2) Briefly describe why we might expect to arrive at the equilibrium price and equilibrium quantity.

Consider the market for laptops. The demand for laptops is given by the equation \( P_D(Q) = 40 - 2Q \). The supply for laptops is given by the equation \( P_S(Q) = 2Q \).

(3) Give the equilibrium price and quantity for these specific demand and supply curves.

Problem 2. Consider the market for Widgets.

(a) Sketch a demand/supply diagram for this market, clearly labeling the equilibrium.

You study survey data and observe that if Widgets cost $5, then 200 units of Widgets are demanded. You also observe that if Widgets cost $10, then 150 Cogs are demanded and if Widgets costs $8.00 then 250 Cogs are demanded.

(b) Calculate the cross price elasticity of demand for Widgets and Cogs. (You need to pick out the relevant information from above.)

(c) How are these two goods related (substitutes, complements, not related)?

(d) Suppose the price of Cogs decreases. Draw and label the effects of this change on your diagram from part (a). Label the new equilibrium price and quantity.

(e) Explain why you changed your diagram in this manner.

(f) Explicitly state what happened to equilibrium price and quantity.
**Problem 3.** This problem will use supply and demand diagrams to examine the short and long run effects of OPECs 1973 decision to decrease the supply of oil.

(a) Illustrate the impact of this shift on the market for oil in the short run (keeping in mind how the short run will affect the shape of each curve). Specifically, show the initial equilibrium and then the equilibrium after the shift.

(b) Illustrate the impact of this shift on the market for oil in the long run.

(c) Clearly explain why your pictures differ.

Assume OPECs goal (reason for shifting supply) was to increase its total revenue.

(d) Did OPEC achieve its goals in the short run? Did OPEC achieve its goals in the long run? Explain your reasoning.

**Problem 4.** Consider the market for higher education in the U.S. Assume that supply is more inelastic than demand.

(a) Give a possible explanation for why supply would be more inelastic than demand.

(b) Graphically illustrate the market (taking into account this information on supply and demand).

Now suppose the government decides to subsidize higher education (all federal and state aid, as well as state universities can be modeled as a subsidy) by amount $s$ per unit.

(c) Graphically illustrate the market after the subsidy.

(d) Who receives more of the benefit of the subsidy? Why?

(e) Indicate all surpluses before and after the subsidy is imposed using a table.