Microeconomic Analysis – Problem Set #1

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Conceptual & Critical Thinking Questions

Please answer the following questions clearly and concisely (1-3 sentences). Use examples and/or give further explanation as necessary.

1. For each of the following pairs, which of the two goods is more likely to be *inelastically* demanded and why?

    (a) Demand for tangerines vs. demand for fruit

    (b) Demand for beef next month vs. demand for beef over the next decade

    (c) Demand for Exxon gasoline at the corner of 7th and Grand vs. demand for gasoline in the entire city

    (d) Demand for insulin vs. demand for vitamins

2. For each of the following pairs, which of the two goods is more likely to be *elastically* supplied?

   (a) Supply of toothpicks or scotch whiskey

   (b) Supply of construction workers in Binghamton, New York, vs. supply of construction workers in New York State

   (c) Supply of breakfast cereal vs. supply of food

   (d) Original Van Gogh paintings or pencils

3. Two drivers, Tom and Jerry, each drive up to a gas station. Before looking at the price, each places an order with the attendant. Tom says, "I'd like 10 gallons of gas." Jerry says, "I'd like $10 of gas." Who has a higher price elasticity of demand for gas?

4. Suppose someone claims that "food prices have gone up, so people will consume less food." Under what conditions will this conclusion be correct? Under what conditions will this conclusion be wrong?

Problems

Please answer the following questions. Show all of your work and be sure to fully label all axes, points, and curves on any graphs (if applicable).

5. Airline workers go on strike. How does this affect the markets for air travel, and for train travel? What will happen to equilibrium price and quantity for each market?

6. Suppose there is a bitterly cold and unusually snowy winter that has significantly depleted the amount of available rock salt used to treat the roads. This is a *major* event. Suppose there is also a *minor* event – another snow storm coming next week, and roads and sidewalks need to be salted. What will happen to equilibrium price and quantity?

7. The supply and demand for eggs are given by:

$$q_D = 1000 - 300p$$
$$q_S = 200p - 250$$

(a) Calculate the equilibrium quantity and price (q^*, p^*).

(b) Sketch a rough graph of this market.

(c) Calculate the price elasticities of supply and of demand in equilibrium. Which is more elastic?

(d) Suppose price decreased by 10% from equilibrium. How much more or less (in percentage terms) would buyers be willing to buy and sellers be willing to sell?

8. The demand for gym memberships is given by

$$q_D = 500 - 5p$$

(a) What is the price elasticity of demand at a price of $80? Is this relatively elastic or relatively inelastic?

(b) What is the total revenue at a price of $80?

(c) What is the price elasticity of demand at a price of $10? Is this relatively elastic or relatively inelastic?

(d) What is the total revenue at $10?

(e) At what price is demand unit elastic, i.e. $\epsilon_D = -1$?

(f) What is the total revenue at the price you find in part (e)?