Week 2: Questions and Problems

1. Suppose you are planning to conduct a study of the running shoe market. List the factors that you believe would cause changes in the demand for running shoes. In each case, note whether the relationship would be positive (direct) or negative (inverse). Also list the factors that you believe would affect the supply, again noting the nature of the relationship.

2. In each case below, identify the effect on the demand curve for steak (a normal good).
   a. An increase in the price of lamb.
   b. A decrease in the population.
   c. An increase in consumer income.
   d. A decrease in the price of steak sauce.
   e. An increase in advertising by chicken producers.

3. In each case below, identify the effect on the supply curve for coal.
   a. The development of a new, lower cost mining technique.
   b. An increase in wages paid to coal miners.
   c. The imposition of a $2 per ton tax on coal.
   d. The government imposes a ban on all imports of coal.
   e. A new government regulation requiring air purifiers in all work areas.

4. In a competitive labor market, demand for workers is \( Q_D = 10,000 - 100W \), and supply is \( Q_S = 2,000 + 1,900W \), where \( Q \) is the quantity of workers employed and \( W \) is the hourly wage. What is the initial equilibrium wage and employment level? Suppose that the government decides that $5 per hour is the minimum allowable wage in any market. How would this new minimum wage alter this market? What would the new employment level be? What would happen to total payments to labor? Would there be any excess supply of labor? If so, how much?

5. For each sentence below describing changes in the tangerine market, note whether the statement is true, false, or uncertain, and explain your answer. You will find it helpful to draw a graph for each case.
   a. If consumer income increases and worker wages fall, quantity will rise and prices will fall.
   b. If orange prices decrease and taxes on citrus fruits decrease, quantity will fall and prices will rise.
   c. If the price of canning machinery (a complement) increases and the growing season is unusually cold, quantity and price will both fall.

6. If demand for show tickets is described by the equation \( Q_D = 100 - p \), and supply is \( Q_S = 20 + p \), find the equilibrium price and quantity. How would your answer change if the supply curve shifted to \( Q'_S = 10 + p \) due to increases in actor salaries?

7. Suppose the demand for onion ice cream was described by the equation \( Q_D = 20 - p \), and the supply was described by \( Q_S = -40 + p \). What are the equilibrium price and quantity? Show your answer using a graph.

8. If demand for toy drums is described by the equation \( Q_D = 300 - 5p \), and supply is \( Q_S = 60 + 3p \), find the equilibrium price and quantity. How would your answer change if a decrease in consumer income shifted the demand curve to \( Q'_D = 220 - 5p \)?
9. A new chemical cleaning solution is introduced to the market. Initially, demand is \( Q_D = 1,000 - 2p \) and supply is \( Q_S = 100 + p \). Determine the equilibrium price and quantity. The government then decides that no more than 300 units of this product should be sold per period, and imposes a quota at that level. How does this quota affect the equilibrium price and quantity? Show the solution using a graph and calculate the numerical answer.

10. Demand for park visits is \( Q_D = 10,000 - 100P \). If park visits are free, how many visitors will attend? How will your answer change if the park adds a $20.00 admission fee? Show using a graph.

11. A firm introduces a new model of MP3 player, which can play both audio and video files. The price is the same as that of a previous model that can only play audio files. What would happen to the market of the previous model? What if the new model is more expensive than the previous one?

12. In a competitive labor market, demand for workers is \( Q_D = 9,900 - 100W \), and supply is \( Q_S = 2,000 + 1,900W \), where \( Q \) is the quantity of workers employed and \( W \) is the hourly wage. Suppose the government decides to impose a wage ceiling of $3 per hour. What would the equilibrium be in this labor market?

13. New York requires all taxis to be licensed, and limits the number of licenses available. Suppose the market is currently in equilibrium. If the city no longer requires licenses, what will happen to the equilibrium price and quantity supplied? Why?

Further Questions

1. (a) Using simple graphical illustration(s), explain the difference between Price Consumption Curve (PCC) and Income Consumption Curve (ICC).
(b) What is the difference between Price Consumption Curve and Demand Curve?
(c) Explain the term “marginal rate of substitution.” What does a \( \text{MRS}_{x,y} = \frac{5}{2} \) mean?

2. The market supply and demand curves for chips are given as follows:

![Diagram of demand and supply curves for chips]

a. Determine the equilibrium price of chips.

b. What is the equilibrium quantity of chips bought?
c. Determine the amount of shortage or surplus that would develop if the price of chips were fixed at P=$15/unit and show it on a graph.

d. Explain how the market will react in order to return to an equilibrium price and quantity if the fixed price at P=$15 were removed.

3. Ndeshi consumes two goods, juice and pizza. Given the information below, illustrate both the price-consumption curve associated with changes in the price of juice and the demand curve for juice.

<table>
<thead>
<tr>
<th>Price: Juice</th>
<th>Price: Pizza</th>
<th>Quantity: Juice</th>
<th>Quantity: Pizza</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2</td>
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<td>7.5</td>
<td>3</td>
<td>$30</td>
</tr>
<tr>
<td>$2.5</td>
<td>$5</td>
<td>6</td>
<td>3</td>
<td>$30</td>
</tr>
<tr>
<td>$3</td>
<td>$5</td>
<td>4</td>
<td>3.5</td>
<td>$30</td>
</tr>
<tr>
<td>$4</td>
<td>$5</td>
<td>2.5</td>
<td>4</td>
<td>$30</td>
</tr>
</tbody>
</table>

4. The following diagram shows two consumer equilibrium when the price of X decreases.

![Diagram of consumer equilibrium](image)

a. Which line is the original budget line?

b. Please show the substitution effect and income effect on the diagram.

c. Please explain why you think there is substitution and income effect between those concerned points.