EC101 DD/EE. Problem Set 4

*Multiple Choice [MC] questions have only one correct answer. Other kinds of questions may have more than one correct answer. You should understand why your answers are correct. If you don’t understand the meaning of a question, you may write to your own TF, but do not expect him/her to give you answers. The problem set will not be graded, but the way you discuss the problems in your discussion section will affect your discussion-section score.*

1. **[MC]** Why does marginal utility usually diminish?
   a. Because the last units are assigned to less essential uses
   b. Because additional units cost more than the first units
   c. Because rock beats scissors
   d. **ALL** of the above

2. Consider the demand for the following goods, and state whether you think the demand for them is elastic or inelastic. Explain why.
   i. Water
   ii. Computers
   iii. A Lamborghini (a very expensive Italian sports car)
   iv. Coffee from Pavement
   v. All types of coffee
   vi. Cigarettes

3. **[MC]** The price of a bus ride decreases, but the total revenue of the bus company does not change. This means the demand for bus rides must be, approximately, _________________.
   a. unit elastic
   b. inelastic
   c. elastic
   d. perfectly inelastic

4. Suppose Bill Gates and your uncle each like to have one glass of champagne every night. Do you think Bill Gates’ demand is relatively elastic or inelastic? What about your uncle’s? Why?

5. Suppose the price elasticity of demand for Dove shampoo is \(-1.5\).
   i. If the price of Dove shampoo increases by 20%, by how much will the quantity demanded decrease?
   ii. Unilever owns many hair care brands, including Dove. Suppose Unilever increases the price of ALL of its shampoos by 20%. Do you think the quantity demanded of all Unilever shampoos will decrease by more or less than your answer to part i?

6. Discuss the advantages and disadvantages of using WTP to measure welfare instead of marginal utility (MU).

7. Usually, WTP is decreasing as you obtain more units of the same good. Can you think of a good or service for which WTP could be increasing with the quantity you have? Explain.
8. Suppose the price of coffee increases by 20% because of the lack of rain.
   i. If the quantity consumed of bagels decreases by 15% as a result, what can you say about the relationship between coffee and bagels?
   ii. What is the most that the quantity demanded of coffee can fall if coffee has an inelastic demand?
   iii. Would you expect the demand for coffee to be more or less elastic than the demand for Starbucks coffee? Why?

9. Amy and Bob are farmers. Amy plants both lettuce and spinach while Bob specializes in planting spinach. Suppose Melania Trump announces that she looks good because she eats lots of lettuce.
   i. What will happen in the market of spinach?
   ii. What should Amy and Bob do in response?
   iii. What can you conclude about the cross-price elasticities of the supply and demand for spinach?

![Graph of Macaroni and Income](image)

10. [MC] The above figure shows the relationship between Moira's income and the quantity of macaroni that she demands. When income is less than $350 per month, macaroni
   a. is a normal good
   b. has negative income elasticity
   c. has many substitutes
   d. is an inferior good

11. [MC] Marginal utility is positive, but declining, when total utility is
   a. rising at an increasing rate.
   b. declining at an increasing rate.
   c. rising at a decreasing rate.
   d. declining at a decreasing rate.

12. Tom and colleagues have estimated that the cross-price elasticity of demand between beer and wine is 0.31. If the price of wine increases by 10 percent, then the quantity of beer demanded will _____ by _____ percent.

13. [MC] In addition, Tom has estimated the income elasticity of demand for beer to be −.09. This means that
   a. beer is a normal good.
   b. beer is a luxury.
   c. very few people like beer.
   d. people want to drink their usual amount of beer no matter their income level.
The following table gives information about costs and benefit of an activity. Please answer the following questions using this table.

<table>
<thead>
<tr>
<th>Amount</th>
<th>Total Cost</th>
<th>Marginal Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$ 8</td>
<td>$18</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>3</td>
</tr>
</tbody>
</table>

14. [MC] In the table above, the total benefit of three units is:
   a. $9
   b. $24
   c. $30
   d. $40

15. [MC] In the table above, the marginal cost of the fourth unit is:
   a. $7
   b. $9
   c. $11
   d. $36

16. [MC] Betty consumes only milkshakes and sandwiches. Suppose that the price of a milkshake doubles. Then Betty will buy _______ milkshakes and her marginal utility from milkshakes will _______.
   a. fewer; decrease
   b. fewer; increase
   c. the same number; remains the same
   d. more; decrease

17. Your WTP for a burrito is $10. Your WTP for sushi is $12. The burrito costs $8 and the sushi costs $9.
   i. Which item has a lower opportunity cost?
   ii. How much welfare (surplus) would you get from the burrito?
   iii. How much welfare (surplus) would you get from the sushi?
   iv. Which item should you eat for lunch in order to maximize your welfare?

18. In the following cases, explain the effect on the equilibrium price AND quantity of good X. Does the price/quantity increase, decrease, or is the effect ambiguous (could increase or decrease)?
   i. Demand shifts left and supply shifts left.
   ii. Demand shifts left and supply shifts right.
   iii. Demand shifts right and supply shifts left.
   iv. Demand shifts right and supply shifts right.