Homework #2

1. Use the following graphs in answering this question. (The two graphs are identical – I put two because one graph would get too cluttered when you shade in the surpluses.)

![Supply and Demand for Apartments](image1)

![Supply and Demand for Apartments](image2)

a. What is the equilibrium rent and quantity of apartments rented in Kent?

b. Show on graph 1 the consumer surplus, producer surplus, and deadweight loss (if there is any). Calculate the amount of consumer surplus, producer surplus, and deadweight loss.

c. Assume the city of Kent imposes rent control of $400. With this **price ceiling**, what will be the rent and quantity of apartments rented in Kent?

d. Show on graph 2 the consumer surplus, producer surplus, and deadweight loss (if there is any). Calculate the amount of consumer surplus, producer surplus, and deadweight loss.

e. Are consumers better off or worse off with rent control? Are landlords (producers) better off or worse off with rent control? Explain.
f. Is the market efficient with no rent control? Is the market efficient with rent control? Explain.
2. The demand curve and supply curve for fast food jobs are given on the graph below.

![Supply and Demand for Fast Food Workers](image)

a. Suppose the government increases the minimum wage to $6 per hour. Is there a shortage or surplus of workers? How many workers? How many workers are working with a minimum wage of $6 compared to if there were no minimum wage?

b. What would be the result of a minimum wage of $3.00 per hour?

c. Do you think it would be a good idea for the U.S. to raise the minimum wage above the current amount of $5.15 per hour? Substantiate your view using economic reasoning.

3. Suppose Kent State increases the student price of parking passes from $100 to $200. The number of parking passes bought decreases from 6,000 to 2,000.

a. What is the price elasticity of demand? Is this elastic or inelastic? Show your calculations.

b. If the University is trying to get the most parking revenue possible, does the University want to raise their price from $100 to $200? Defend your answer.
4. The graphs below show the supply curve and demand curve for cigarettes. (The two graphs are identical – I put two because one graph would get too cluttered when you shade in the surpluses.)

![Graphs showing supply and demand curves for cigarettes.]

a. What is the equilibrium price and quantity with no tax?

b. Draw the consumer surplus and producer surplus on the first graph.

c. The government imposes a tax of 60 cents per pack on cigarettes. Find the new equilibrium price and quantity with the tax.

d. Draw the consumer surplus, producer surplus, government surplus (government tax revenue) and deadweight loss on the second graph.

e. Who has the higher tax incidence of this tax? Explain what we mean by tax incidence.

f. Given your answer to part (e), what do you know about the elasticity of demand compared to the elasticity of supply?

g. Is the market efficient with the tax? Explain.
5. What is the cross price elasticity of demand if a price decrease from $5 to $4 for a sandwich from Subway decreases the quantity demanded of sandwiches at Franklin Square Deli from 400 to 300? Show your calculations.

6. What is the income elasticity of demand if income decreasing from $30,000 to $25,000 causes the quantity demanded for bowling to increase from 1500 to 1600? Show calculations. In this example, is bowling a normal or inferior good? How do you know?

7. Terry derives utility from bottled water and Mt. Dew according to the following table. A bottle of water costs $1 and a Mt. Dew costs $1. Assume that Terry cannot buy partial bottles of water or Mt. Dews.

<table>
<thead>
<tr>
<th># Bottles Water</th>
<th>Total Utility Water</th>
<th># Mt. Dews</th>
<th>Total Utility Mt. Dew</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>360</td>
<td>2</td>
<td>190</td>
</tr>
<tr>
<td>3</td>
<td>500</td>
<td>3</td>
<td>270</td>
</tr>
<tr>
<td>4</td>
<td>620</td>
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<td>7</td>
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<td>490</td>
</tr>
<tr>
<td>8</td>
<td>900</td>
<td>8</td>
<td>520</td>
</tr>
</tbody>
</table>

a. Terry’s income is $7. How many bottles of water and how many Mt. Dews would he consume to maximize his total utility?

b. If the price of bottled water increases to $2, and Terry still has income of $7, how many bottles of water and how many Mt. Dews would he consume to maximize his total utility?

c. What is Terry’s price elasticity of demand for bottled water? (Think about how many he wanted to buy in part a compared to part b. How did his demand for water change when the price of water changed? Use this to find his elasticity of demand.)

d. When the price of water changes (goes from $1 to $2), does the income effect say buy more/less water? Mt. Dew? Does the substitution effect say buy more/less water? Mt. Dew?

e. For Mt. Dew, when the price of water changes (goes from $1 to $2) which of the following statements is true? How do you know?

   i. the income effect is bigger than the substitution effect
   ii. the income effect is smaller than the substitution effect
   iii. the income and substitution effects are equal