Homework 1

<table>
<thead>
<tr>
<th>point</th>
<th>Guns</th>
<th>Butter (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>200</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>400</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>600</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>800</td>
<td>0</td>
</tr>
</tbody>
</table>

1. Draw a Production Possibilities Curve that shows the points in the table shown above (put guns on the vertical axis, butter on the horizontal).

2. What is the opportunity cost of the first 200 guns produced? Where is the opportunity cost of guns the highest?

3. Choose a point F somewhere inside the curve. Is point F efficient, inefficient, or is it impossible to say? Is point F attainable? Explain your answers.

4. Choose a point G somewhere outside the curve. Is point G efficient, inefficient, or is it impossible to say? Is point G attainable? Explain your answers.

5. Say that mad cow disease destroys half the cattle in this society. How would this affect the PPC? Draw a hypothetical curve which shows the situation before and after.

6. Say there is an increase in the population, which means there are more workers available to either raise livestock or produce guns. How would this affect the PPC? Draw a hypothetical curve which shows the situation before and after.

7. Say that there is a new innovation in steel production which means less labor is needed to make steel. How would this affect the PPC? Draw a hypothetical curve which shows the situation before and after.
Homework 2

1. Graph the demand curve for CD’s based on the following information:

<table>
<thead>
<tr>
<th>Price (thousands)</th>
<th>Quantity Demanded (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20</td>
<td>4</td>
</tr>
<tr>
<td>$15</td>
<td>6</td>
</tr>
<tr>
<td>$12</td>
<td>10</td>
</tr>
<tr>
<td>$5</td>
<td>16</td>
</tr>
<tr>
<td>$3</td>
<td>24</td>
</tr>
</tbody>
</table>

2. Graph the supply curve for CD’s based on the following information:

<table>
<thead>
<tr>
<th>Price (thousands)</th>
<th>Quantity Supplied (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20</td>
<td>24</td>
</tr>
<tr>
<td>$15</td>
<td>21</td>
</tr>
<tr>
<td>$12</td>
<td>10</td>
</tr>
<tr>
<td>$9</td>
<td>3</td>
</tr>
<tr>
<td>$8</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Show both the supply and the demand curve on the same graph. What is the equilibrium price in the CD market?
For the following questions, fill in whether there is an increase or decrease.

4. The demand for an inferior good ______________ when the consumers’ income increases.
5. The demand for a normal good ______________ when the consumers’ income increases.
6. Say that consumers receive new information which suggests that orange juice increases stomach ulcers. This would __________ demand for orange juice.
7. Say that news of impending war in Iran leads investors to believe that the price of crude oil will increase in the near future. This causes demand for oil to __________.
8. Say that the government passes health care reform that lowers the cost of providing health care to employees. This causes the supply curve to __________.

9. For the following four diagrams, write whether the price and quantity increases or decreases. Match the letter to the correct diagram:
a. A new trend makes this good more popular.
b. An increase in the minimum wage raises costs for employers.
c. New technology lowers production costs.
d. A recession triggers falling wages, lowering consumers’ income.

For the diagrams:

- Diagram 1: Price __________, Quantity __________
- Diagram 2: Price __________, Quantity __________
- Diagram 3: Price __________, Quantity __________
- Diagram 4: Price __________, Quantity __________
1. Calculate the elasticity of demand for CD’s from point a to b, from b to c, and from c to d.

Calculations:

a to b

b to c

c to d

2. Calculate the slope of the demand curve.

3. What is the difference between the concept of elasticity and the concept of slope?
4. Say that the cross price elasticity of demand for good x and good y is -0.6. What does this imply about the relationship between good x and good y?

5. Say that there is an increase in the price of the raw materials used to produce good x. Draw the effect on the market for good x, and then show the effect of the change in the market for good x on the market for good y. (Indicate the effect on the price and quantity of y)

6. Say that consumers’ income went from $1120 to $1525, and the demand for good z went from 4500 to 3790. Calculate the income elasticity of demand. What does this result imply about good z?

Calculation:

Implication:

7. Say that there is rising demand for good A, which increases the price from $4 to $5. Suppliers in this industry increase production from 2000 units to 3000 units. There is also rising demand for good B, which increases the price of B from $7.50 to $10. Suppliers of B increase their production from 6050 units to 7100 units. Calculate the elasticity of supply for A and B and interpret your results.

Elasticity of Supply for A:

Elasticity of Supply for B:

Interpretation:
Homework 4

1. Using Microsoft Excel, provide a graph of the information in Table 1. (Use the XY Scatter graph type, and select data points connected by lines.) Include on the same graph the information in Table 2. You should have a curve and a line intersecting at a single point. Label the graph “Indifference Curve and Budget Line”, with “Good 1” on the horizontal axis and “Good 2” on the vertical axis. (To do two lines on one graph, go to (XY Scatter, then to “Series” and hit the “Add” button)

2. If Table 1 is the indifference curve, and Table 2 is the budget line, what are the optimal quantities of the goods that the consumer purchases?

3. Also using Microsoft Excel, create a graph of the information in Table 3. Label the graph “Total Utility”.

4. Create a table based on the information in Table 3, of marginal utilities for values of x between 1 and 12. Using Excel, graph this table, labeling it “Marginal Utility”.

5. Are your results consistent with the law of diminishing marginal utility? Explain.