1. (4 pts.) What is the definition of economics?

2. (5 pts.) Does Bill Gates have a scarcity problem? Justify your answer.

3. (6 pts.) On the graph below draw a production possibilities frontier that exhibits increasing opportunity cost. Identify two points: one at which society is not achieving productive efficiency and one where productive efficiency was achieved. Clearly identify both points.

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Missiles

                                  Health Care
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4. (4 pts.) Given the table below, answer the following.

<table>
<thead>
<tr>
<th>Number of parking lots</th>
<th>Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
</tr>
</tbody>
</table>

A. What is the opportunity cost of the third house? _____

D. The table exhibits (pick one): ____ increasing costs  ____ constant costs

5. (6 pts.) Given the following, find the equilibrium price and quantity (show your work):

\[ Q_D = 10 - P \]
\[ Q_S = 4P \]

At a price of $6 will there be excess supply or excess demand? Explain your answer.

6. (5 pts.) What distinguishes a perfectly competitive market from an imperfectly competitive market?

7. (5 pts.) What is the “law of demand”?
8. (15 pts.) The graphs below show the market for personal computers. Show how the graphs would change given the new assumptions by drawing a line on the graph. Then answer the following questions.

A. The cost of computer chips rises.

There was a change in (check one): _____demand _____the quantity demanded
There was a change in (check one): _____supply _____the quantity supplied

C. Consumers’ incomes fall.

There was a change in (check one): _____demand _____the quantity demanded
There was a change in (check one): _____supply _____the quantity supplied

C. The price of computer software rises.

There was a change in (check one): _____demand _____the quantity demanded
There was a change in (check one): _____supply _____the quantity supplied
9. (4 pts.) On the graph below draw a supply and demand curve for a competitive market. Now assume the government has imposed a price ceiling and that the price ceiling is below the equilibrium price. Draw a line representing the price ceiling. Did the price ceiling create a shortage or a surplus?

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>11</td>
<td>22</td>
</tr>
</tbody>
</table>

10. (3 pts.) Explain what the elasticity of demand measures.

11. (3 pts.) Given the demand schedule shown below, what is the elasticity of demand between a price of 10 and a price of 11 (you can express your answer as a fraction)?

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>11</td>
<td>22</td>
</tr>
</tbody>
</table>
12. (40 pts.) Put an "X" directly on the "T" if the statement is true, and an "X" on the "F" if it is false.

T  F  Capital is defined by economists as long-lasting tools used in producing goods and services.
T  F  Society cannot currently produce a point outside the production possibilities frontier.
T  F  Allocative efficiency occurs when the mix of goods produced matches preferences of consumers.
T  F  Improvements in technology will shift the production possibilities frontier outward.
T  F  Adam Smith believed that the use of resources needed to be tightly regulated by the government to prevent the economy from degenerating into a state of chaos.
T  F  In a socialist system property is owned privately.
T  F  In a command economy decisions on how to allocate resources are made by markets.
T  F  Profits lead to allocative efficiency because they give firms an incentive to produce goods that consumers want.
T  F  Profits provide firms with an incentive to use the least amount of resources possible to produce goods.
T  F  In perfectly competitive markets individual producers have no control over the market price.
T  F  When the quantity supplied equals the quantity demanded in some market, the market is in equilibrium.
T  F  If steak is a normal good, demand for steak will fall if consumers’ incomes rise.
T  F  If goods A and B are substitutes, an increase in the price of B will cause the demand for A to fall.
T  F  Demand for a good is more inelastic when the good has no close substitutes.
T  F  When the share of income consumers spend on a good is smaller, demand for the good will be more inelastic.
T  F  If the elasticity of demand for a good were –.5 at a price of $10, we would say demand for the good is inelastic at that price.
T  F  If the price of a good rises, and both prices are in the inelastic portion of the demand curve, total expenditures will fall.
T  F  If the income elasticity of a good is negative, the good is a normal good.
T  F  If chicken and hamburger are substitutes, their cross-price elasticity will be positive.
T  F  The elasticity of supply will be more inelastic if we are looking at changes in the amount produced in a two-month period than if we are looking at changes in the amount produced over two years.