I. Consider the following table:

<table>
<thead>
<tr>
<th>Price/Unit</th>
<th>Quantity in Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$200</td>
<td>0</td>
</tr>
<tr>
<td>$195</td>
<td>1</td>
</tr>
<tr>
<td>$190</td>
<td>2</td>
</tr>
<tr>
<td>$ 0</td>
<td>40</td>
</tr>
</tbody>
</table>

(1) Assuming this is a linear relationship, draw the supply or demand curve implied by the table.
(2) Is this a supply or a demand curve?
(3) How do you know?
(4) What is the slope of the curve you drew in I?
(5) What is the quantity when the price is $150?
(6) What is the quantity when the price is $100?
(7) By what amount does quantity change each time the price is increased by a dollar?
(8) At what price is quantity 10?
(9) At what price is quantity 15?
(10) By what amount must the price change to increase quantity by one unit?

II. Consider the following relationship between price and quantity.

\[ P = 15Q \]

(1) Draw the supply or demand curve implied by this function.
(2) Is the curve you drew a supply or demand curve?
(3) How do you know?
(4) What is the slope of the curve you drew in I?

III. Using the supply and demand curves drawn in I and II above:

(1) Find the equilibrium price.
(2) Find the equilibrium quantity.
(3) What is total revenue at the equilibrium point?
(4) What is average revenue at the equilibrium point?
(5) What is marginal revenue at the equilibrium point?
(6) What is total cost at the equilibrium point?
(7) What is average cost at the equilibrium point?
(8) What is the consumer surplus at the equilibrium point?
IV. Here is another relationship between price and quantity?

\[ P = 400 - 5Q \]

(1) Compared to the curves you drew in I and II, does this represent an increase or decrease in supply or demand?

(2) Using this supply or demand curve and the appropriate curve drawn above, find the new equilibrium price and quantity.

(3) What is total revenue at the new equilibrium point?

(4) What is total cost at the new equilibrium point?

(5) What is the total profit at the new equilibrium point?

(6) What is the consumer surplus at the new equilibrium point?

(7) At a price ceiling of $180:

   a. What is the quantity supplied?
   b. What is the quantity demanded?
   c. Is there excess supply or excess demand?
   d. What is the amount of excess supply or excess demand?
   e. What is the consumer surplus?
   f. What is the total profit?