Chapter 2 – “Demand and Supply Analysis.”

“Review Questions” (pages 64-65): 1, 2, 3, 4, 5, 7, 8, and 9.
“Problems” (pages 65-66): 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.9, 2.11, and 2.14.

Additional Questions:

1) Consider the market for cell phones.
   i. Suppose there is a increase in supply (with no change in demand). How will the equilibrium price and equilibrium quantity change? Clearly explain.
   ii. Suppose there is an increase in demand (with no change in supply). How will the equilibrium price and equilibrium quantity change? Clearly explain.
   iii. Suppose there is a simultaneous increase in demand and supply. How will the equilibrium price and equilibrium quantity change? Clearly explain.

2) Consider a market in which demand is given by \( D(p) = 120 - 2p \) and supply is given by \( S(p) = 4p \).
   i. Is the “Law of Demand” satisfied? Clearly explain.
   iii. Is there “excess demand,” “excess supply,” or neither at a price of \( p = 12 \)? Explain.
   iv. Is there “excess demand,” “excess supply,” or neither at a price of \( p = 24 \)? Explain.
   v. Determine the equilibrium price and equilibrium quantity in this market.

3) Consider a market in which demand is given by \( D(p) = 1,600 - 200p \).
   i. Graphically illustrate demand in this market.
   ii. State an expression for price elasticity of demand (as a function of price).
   iii. At what price is demand “unit elastic”?

4) Consider the linear demand curve \( D(p) = a - bp \), with \( a > 0 \) and \( b > 0 \).
   i. Is the Law of Demand satisfied?
   ii. Determine the corresponding inverse demand function.
   iii. Determine the “choke price”?
   iv. Over what range of prices is demand inelastic? Over what range of prices is demand elastic? Clearly explain.
5) The table below summarizes estimates for Price, Cross-Price, and Income Elasticities of Demand for “Product X” and “Product Y” under current market conditions. Based upon these estimates, answer the following questions (making specific reference to the relevant values in the table).

<table>
<thead>
<tr>
<th>Elasticity</th>
<th>Product X</th>
<th>Product Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Elasticity of Demand</td>
<td>-0.64</td>
<td>-1.12</td>
</tr>
<tr>
<td>Cross-Price Elasticity of Demand</td>
<td>0.21</td>
<td>0.32</td>
</tr>
<tr>
<td>Income Elasticity of Demand</td>
<td>-0.17</td>
<td>0.08</td>
</tr>
</tbody>
</table>

i. Is demand for “Product Y” Elastic, Inelastic, or Unit Elastic? Explain.
ii. Would a slight increase in the price of “Product X” result in increased or decreased Total Expenditure on “Product X”? Explain.
iii. Is “Product Y” a substitute for or a complement to “Product X”? Explain.
iv. Would an increase in the price of “Product X” lead to an increase, decrease, or no change in demand for “Product Y”? Explain.
v. Would an increase in per capita income lead to an increase, decrease, or no change in demand for “Product X”? Explain.
vi. Is “Product Y” a normal good or an inferior good? Explain.

6) Consider a market with demand as illustrated by the linear function below:

$$Q = 18.00 - 0.004Q$$

i. Is demand “elastic,” “inelastic,” or “unit elastic” at a price of $12.50? Explain.
ii. If price were to increase from $10.25 to $11.75, would the value of price elasticity become larger or smaller? Explain.
iii. If price were to increase from $10.25 to $11.75, would total consumer expenditures increase or decrease? Explain.
iv. Could total consumer expenditures on this good ever be $200,000? Explain.