**HW Questions for Chapter 3: Demand, Supply and Market Equilibrium**

1. Illustrate the following with supply and demand curves:
   a. With increased access to wireless technology and lighter weight, the demand for laptop computers has increased substantially. Laptops have also become easier and cheaper to produce as new technology has come online. Despite the shit of demand, prices have fallen.
   b. Cranberry production in Massachusetts totaled 1097 million barrels in 2006, a 39 percent increase from the previous year's production. This year's crop yield averaged 140.9 barrels per acre, an increase of over 40 barrels per acre from the 2005 crop But demand increased by even more than supply, actually pushing 2006 prices above 2005 prices.
   c. During the high-tech boom in the late 1990s, San Jose office space was in very high demand and rents were very high. With the national recession that began in March 2001, however, the market for office space in San Jose was hit very hard, with rents per square foot falling. In 2005, the employment numbers from san Jose were rising slowly and rents began to rise again. Assume for simplicity that no new office space was built during the period.
   d. Before economic reforms were implemented in the countries of Eastern Europe, regulation held the price of bread substantially below equilibrium. When reforms were implemented, prices were deregulated and the price of bread rose dramatically. As a result, the quantity of bread demanded fell and the quantity of bread supplied rose sharply.
   e. The steel industry has been lobbying for high taxes on imported steel. Russia, Brazil, and Japan have been producing and selling steel on world markets at $610 per metric ton, well below what equilibrium would be in the United States with no imports. If no imported steel was permitted into the country, the equilibrium price would be $970 per metric ton. Show supply and demand curves for the United States, assuming no imports; then show what the graph would look like if U.S. buyers could purchase all the steel that they wanted from world markets at $610 per metric ton; show the quantity imported steel.
2. Do you agree or disagree with each of the following statements? Briefly explain your answers.
   a. The price of a good rises, causing the demand for another good to rise. Therefore, the two goods are complements.
   b. A shift in demand causes the price of a good to fall. The shift must have been a decrease in demand.
   c. When the price of a good changes, the quantity of that good demanded or supplied changes- that is, the curve shifts, or changes position.

d. Two inferior goods cannot be substitute for each other.
e. If demand increases and supply increases at the same time, price will clearly rise.
f. The price of good A falls. This causes a decrease in the price of good B. Therefore, goods A and B are substitutes.

3. The following sets of statements contain common errors. Identify and explain each error.
   a. Demand increase, causing prices to rise. Higher prices cause demand to fall. Therefore, prices fall back to their original levels.
   b. The supply of meat in Russia increases, causing meat prices to fall. Lower prices always mean that Russian households spend more on meat.

4. For each of the following statements, draw a diagram that illustrates the likely effect on the market for eggs. Indicate in each case the impact on equilibrium price and equilibrium quantity.
   a. A surgeon general warns that high-cholesterol foods cause heart attacks.
   b. The price of bacon, a complementary product, decreases.
   c. An increase in the price of chicken feed occurs.
   d. Caesar salads become trendy at dinner parties.(The dressing s made with raw eggs.)
   e. A technological innovation reduces egg breakage during packing.

5. Suppose the demand and supply curves for eggs in the United States are given by the following equations:

$$Qd = 100 - 2P$$
$$Qs = 10 + 40P$$

Where Qd = millions of dozens of eggs American would like to buy each year; Qs = million of dozens of eggs U.S. farms would like to sell each year; P = price per dozen of eggs.
   a. Fill in the following table

| Price (per dozen) | Quantity Demanded (Qd) | Quantity Supplied (Qs) |
|---|---|---|
| $ 0.50 | | |
| $ 1.00 | | |
| $ 1.50 | | |
| $ 2.00 | | |
| $ 2.50 | | |

   b. Use the information in the table to find the equilibrium price and quantity.
   c. Graph the demand and supply curves and identify the equilibrium price and quantity.

6. Suppose the market demand for pizza is given by
7. Qd = 300 – 20P and the market supply for pizza is given by Qs = 20P – 100, where P = price(per pizza).
   a. Graph the supply and demand schedules for pizza using $5 through $15 as the value of P.
   b. In equilibrium, how many pizzas would be sold and at what price?

c. What would happen if suppliers set the price of pizza at $15? Explain the market adjustment process.
d. Suppose the price of hamburgers, a substitute for pizza, doubles. This leads to a doubling of the demand for pizza. (At each price, consumers demand twice as much pizza as before.) Write the equation for the new market demand for pizza.
e. Find the new equilibrium price and quantity of pizza.