

### Homework #3

problem #1 from Ch. 3, p. 71 of Case/Fair *Principles...* (6th ed.)  
problem #4 from Ch. 3, p. 79 of Krugman/Wells *Microeconomics* (1<sup>st</sup> ed.)  
problem #7, a–c from Ch. 4, p. 98 of Case/Fair *Principles...* (6th ed.)  
and one of my own problems

1. Illustrate the following with supply and demand curves:
  - a. In 2000, the economy expanded, increasing the demand for labor and pushing up wages.
  - b. During the year 2000, cranberry growers produced an enormous crop; as a result the price fell from \$55 a year earlier to \$42.
  - c. As more people bought home computers during the 1990s, the demand for access to the Internet increased sharply. At the same time, new companies like Erol's began to enter the Internet-access market, competing with older more established services such as America Online. Despite a massive increase in demand, the price of access to the Web actually declined.
  - d. Before economic reforms in the countries of Eastern Europe, regulation held the price of bread substantially below equilibrium. When reforms were implemented, prices were deregulated and they 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 \$22 per metric ton, well below what equilibrium would be in the United States with no imports. If no imported steel were permitted in the country, the equilibrium price would be \$35 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 rolled steel that they wanted from world markets at \$22; show the quantity of imported steel.) On March 3, 2000, the Federal Trade Commission voted 5 to 1 not to impose high import duties (taxes) on imported steel.
  
4. Show in a diagram the effect on the demand curve, the supply curve, the equilibrium price, and the equilibrium quantity of each of the following events.
  - a. The market for newspapers in your town.  
**Case 1:** The salaries of journalists go up.  
**Case 2:** There is a big news event in your town, which is reported in the newspapers
  - b. The market for St. Louis Rams cotton T-shirts.  
**Case 1:** The Rams win the national championship.  
**Case 2:** The price of cotton increases.
  - c. The market for bagels.  
**Case 1:** People realize how fattening bagels are.  
**Case 2:** People have less time to make themselves a cooked breakfast.
  - d. The market for the Krugman and Wells economics textbook.  
**Case 1:** Your professor makes it required reading for all of his or her students.  
**Case 2:** Printing costs are lowered by the use of synthetic paper.

(continued on the next page)

7. Suppose that the world price of oil is \$16 per barrel, and suppose that the United States can buy all the oil it wants at this price. Suppose also that the demand and supply schedules for oil in the United States are as follows:

<u>price (\$ per barrel)</u>	<u>U.S. quantity demanded</u>	<u>U.S. quantity supplied</u>
14	16	4
16	15	6
18	14	8
20	13	10
22	12	12

- On graph paper, draw the supply and demand curves for the United States.
- With free trade in oil, what price will Americans pay for their oil? What quantity will Americans buy? How much of this will be supplied by American producers? How much will be imported? Illustrate total imports on your graph of the U.S. oil market.
- Suppose the United States imposes a tax of \$4 per barrel on imported oil. What quantity would Americans buy? How much of this would be supplied by American producers? How much would be imported? How much tax would the government collect?

**Do this too!** Suppose that the market demand for hamburgers is given by:  $Q_D = 10 - p$  and that the market supply is given by:  $Q_S = 2 + p$ , where  $p$  is the price of a hamburger.

- What is the equilibrium price of hamburgers? What is the equilibrium quantity of hamburgers supplied and demanded?
- Solve the market demand equation and solve the market supply equation for price. This yields the inverse market demand function and the inverse market supply function.
- Graph the inverse market demand and inverse market supply functions, placing quantity on the horizontal axis and price on the vertical axis. Do they intersect at the point corresponding to the equilibrium price and equilibrium quantity?
- Now suppose that the government imposes an excise tax of \$2 per hamburger. What is the new quantity of hamburgers supplied and demanded? Hint: At what quantity is the inverse supply curve \$2 higher than the inverse demand curve?
- What is the new effective price that consumers pay per hamburger? What is the new price that producers receive per hamburger?