ECO101A: Introduction to Economics

Tutorial 4

1. Suppose the market for widgets can be described by the following equations:
   Demand: $P = 10 - Q$ Supply: $P = Q - 4$
   where P is the price in dollars per unit and Q is the quantity in thousands of units. Then:
   a. What is the equilibrium price and quantity?
   b. Suppose the government imposes a tax of $1 per unit to reduce widget consumption and raise government revenues. What will the new equilibrium quantity be? What price will the buyer pay? What amount per unit will the seller receive?
   c. Suppose the government has a change of heart about the importance of widgets to the happiness of the American public. The tax is removed and a subsidy of $1 per unit granted to widget producers. What will the equilibrium quantity be? What price will the buyer pay? What amount per unit (including the subsidy) will the seller receive? What will be the total cost to the government?

2. In Exercise 4 in Chapter 2 (page 62), we examined a vegetable fiber traded in a competitive world market and imported into the United States at a world price of $9 per pound. U.S. domestic supply and demand for various price levels are shown in the following table.

Price	U.S. Supply (million pounds)	U.S. Demand (million pounds)
3	2	34
6	4	28
9	6	22
12	8	16
15	10	10
18	12	4

Answer the following questions about the U.S. market:
a. Confirm that the demand curve is given by $Q_D = 40 - 2P$, and that the supply curve is given by $Q_S = (2/3) P$.
b. Confirm that if there were no restrictions on trade, the United States would import 16 million pounds.
c. If the United States imposes a tariff of $3 per pound, what will be the U.S. price and level of imports? How much revenue will the government earn from the tariff? How large is the deadweight loss?
d. If the United States has no tariff but imposes an import quota of 8 million pounds, what will be the U.S. domestic price? What is the cost of this quota for U.S. consumers of the fiber? What is the gain for U.S. producers?