

**UNIVERSITY OF WISCONSIN**

**Economics 101 – Spring 2007**

**Professor Brown**

**Problem Set 6**

**Due By March 9, 2007**

1. Suppose the supply of snow blowers is given as  $P=Q+5$ . The demand is given as  $P=50-2Q$ .
  - a. Calculate the equilibrium price and quantity.
  - b. What is the consumer surplus and producer surplus?
  - c. In order to support low income families, the government enact a price ceiling of \$10. What is the new quantity traded in the market? If there is an excess supply, what is the amount of that excess?
  - d. Calculate the producer surplus?
  - e. Are there more or less snow blowers being purchased?
  - f. Suppose there is a mechanism that assigns the scarce good to the consumers that value snow blowers the most. What are the consumer surplus and deadweight loss?
  - g. Suppose that such mechanism does not exist. What changes to consumer surplus and deadweight loss might occur? Discuss.
  - h. Instead of a price ceiling, suppose the government wants to earn extra income. It imposes an excise tax on snow blowers. The tax is \$15. What is the new market price and quantity?
  - i. How much money does a producer receive for each unit sold?
  - j. What is the tax revenue?
  - k. What amount of the tax is paid by the consumer and what amount of the tax is paid by the producer?
  - l. What is the consumer surplus, producer surplus and deadweight loss?
  - m. If the demand curve is steeper than the supply curve, who will pay the greater share of the tax?
  - n. If the supply curve is steeper than the demand curve, who will pay the greater share of the tax?
  
2. Suppose the demand curve is  $P=100-Q$ . The supply curve is  $P=Q$ .
  - a. What is the equilibrium price and quantity?
  - b. Suppose the government imposes a tax of \$10 per unit on the buyers. What is the new equilibrium quantity exchanged? Tax revenue?
  - c. How does tax revenue change as the tax rate increases?