Problem Set # 1

September 22, 2008

1. Suppose the demand function for apples is \( D(p) = 10 - 2p \) and the supply function for apples is \( S(p) = 2 + 3p \).

   (a) What is the equilibrium price in the absence of tax?

   (b) If the government impose a sales tax on apples and the tax rate is one dollar an apple, what is the post-tax equilibrium price for apples? How much does buyers pay for an apple? How much does sellers receive for an apple?

   (c) Instead of a sales tax, if the government imposes an excise tax and the tax rate is one dollar an apple, what are your answers to (b)?

   (d) Instead of a quantity tax described in (b), the tax rate of the sales tax is 10% of the transaction amount. (For example, if a buyer pays $1 to purchase an apple, the buyer also needs to pay a $0.1 tax to the government.) What is the post-tax equilibrium price of apples?

2. If the supply curve for bread is perfectly horizontal, how will an excise tax affect the market price of bread? What about a sales tax?