Practice Problems

Supply and Demand

1. Suppose a drought causes an increase in orange prices.
   1. What does this do to the equilibrium price and quantity of orange juice?
   2. Suppose that apple juice is a substitute for orange juice. What impact does your answer in (a) have on the equilibrium price and quantity of apple juice?
2. How would a Canadian government’s ban of caffeine in certain types of soda (such as used to be imposed Mountain Dew) impact the equilibrium price and quantity of coffee? (Increase, decrease, uncertain)
3. How would the same ban influence the producer surplus of coffee producers? (Increase, Decrease, Uncertain)
4. How does an increase in the price of coffee impact the quantity supplied of coffee? (Increase, decrease, no effect)
5. How does an increase in the price of coffee impact the supply of coffee? (Increase, decrease, no effect)
6. Suppose the gasoline tax (paid by producers, i.e. included in the price) is increased by $.05/l. Which of the following statements are true, if demand slopes down and supply slopes up?
   1. Prices will rise by $.05
   2. Prices will rise by less than $.05
   3. Prices will rise by more than $.05
   4. Fixing the supply curve, prices will rise by a greater amount the more inelastic is demand.
   5. None of the above
   6. More than one of the above

Elasticity

1. The price elasticity of demand for cigarettes is estimated by the government to be -0.3. If the government imposes a tax that increases equilibrium prices by 15%, how would cigarette consumption change (direction and percent)?
2. A firm estimates its demand at Q=100-20p. What is the elasticity of demand if it produces 40 units? (Hint: Use q=40 as the quantity. To compute change in prices and quantities, you’ll need to choose another q; pick any one!)
3. For the example in (8), if price falls by a small amount, will revenues rise or fall?
4. A firm estimates its demand at Q=100-20p. What is the elasticity of demand if it sets p=2? (Hint: Use p=2 as the price. To compute change in prices and quantities, you’ll need to choose another p; pick any one!)
5. For the example in (10), if price rises by a small amount, will revenues rise or fall?
6. A firm estimates its demand has an elasticity of -0.5. It is currently producing 1000 units at a price of 10. About what price will it need to charge to sell 1100 units?