ECO410H: Practice Questions 1

1. Consider the following demand curve where Q_1 measures quantity demanded of good 1, P_1 measures the price of good 1, P_2 measures the price of good 2, P_3 measures price of good 3, and X measures population size.

$$ln(Q_1) = \alpha + \beta ln(P_1) + \lambda ln(P_2) + \gamma ln(P_3) + \rho X$$

   (a) Find the cross price elasticity of good 1 with respect to a price change of good 3 (i.e. find ε_{13}).

   (b) Which demand shifters are included in the specification of the above demand curve?

   (c) Suppose an econometric analysis yields $\hat{\beta} = 2.11$. How do you interpret this estimate?

   (d) Suppose an econometric analysis yields $\hat{\beta} = -0.56$. How do you interpret this estimate?

   (e) Suppose an econometric analysis yields $\hat{\lambda} = 0.12$ and $\hat{\gamma} = 0.24$. How do you interpret these estimates?

   (f) Suppose an econometric analysis yields $\hat{\rho} = 0.008$. What would happen to demand if population increased?

2. Do Elzinga and Mills (2011) argue that a high Lerner Index is a clear indicator of significant market power and a lack of competition? [Note: This refers to the paper "The Lerner Index of Monopoly Power: Origins and Uses."]

3. Consider a monopolist facing a linear demand $Q = S(a - P)$ with costs $C(Q) = F + cQ$.

   (a) What happens to demand as S increases? (i.e. what is the meaning of the S parameter?)

   (b) What happens to demand as a increases? (i.e. what is the meaning of the a parameter?)

   (c) What price and quantity does the monopolist set? What are its profits?

   (d) What is the elasticity of demand at the monopolist's profit maximizing price?

   (e) What is the Lerner index at the monopolist's profit maximizing price? What does the Lerner Index measure?

   (f) Verify that $\frac{P-c}{P} = -\frac{1}{\varepsilon}$ at the monopolist's profit maximizing price.

   (g) What happens to the monopolist's behavior if its fixed costs double? If its fixed costs go down by 20%? In the case of fixed cost savings, does the monopolist pass through any of these savings to its customers in the form of lower prices?

   (h) What happens to the monopolist's behavior if its marginal costs go down by 20%? Does it lower prices at all? Does it lower its prices by 20%? In other words, how much of the marginal cost savings does it pass through to its customers?

   (i) If a second firm is considering entering this industry would its marginal costs affect its entry decision? Would its fixed costs affect its entry decision?

4. Suppose the elasticity of demand of beer is -1.25

   (a) What does -1.25 mean exactly?

(b) Write down a demand equation that has a price elasticity equal to -1.25 no matter what the price. What is this functional form called?

(c) If market demand is as given in Part (b), what does this imply about the Lerner Index?