B.E. International Program

Faculty of Economics, Thammasat University

EE 211 Principle of Microeconomics

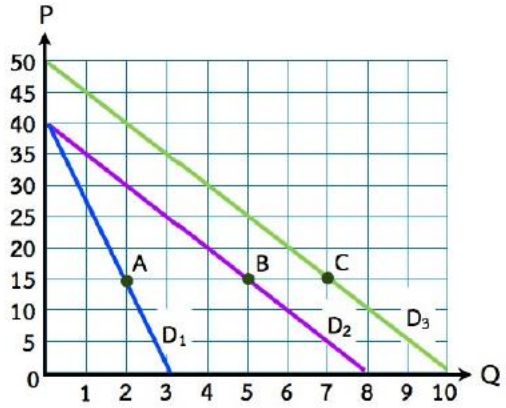
Semester 1/2019

Exercise 3 (Elasticity)

1. In the following scenarios, categorize the price elasticity of demand as elastic, inelastic, or unitary elastic. Wherever applicable, use the midpoint method to calculate the price elasticity of demand.
    a. The price of personal computers falls from $2,750 to $2,250, and the quantity demanded increases from 40,000 units to 60,000 units.
    b. The price of matchbooks doubles from 3 baht to 5 baht, but the quantity purchased does not change.
    c. A sudden decline in the supply of avocados leads to an increase in price by 10% and a concomitant reduction in quantity demanded by 20,000 units from the original level of 90,000 units.
    d. Thailand Post Office increases the price of a stamp from 3 baht to 4 baht, but its total revenue remains the same.

2. Suppose you are hired as a consultant for the BTS company. The statisticians inform you that at the current fare of 15 baht, the system carries 50,000 riders per day. They also indicate that for each 3 baht increase (decrease) in the the fare, ridership decreases (increases) by 5,000 passengers.
    a. What is the point price elasticity of demand at the current fare?
    b. To consider raising total revenue for the transit system, the BTS company has hired you to determine by how much it should increase the fare. What do you advise, and why?

3. From the graph below, calculate the *point* price elasticities of demand at A, B, and C. Explain briefly.



4. Consider the following questions for the cassava market.
    a. Suppose that when the average income of consumer increases by 10%, the quantity demanded for cassava decreases by 2%. Calculate the income elasticity of demand for cassava. Is cassava a normal good or inferior good?
    b. Suppose that the price of cassava falls 5% and farmers produces 10% less. Calculate the price elasticity of sypply for cassava.
    c. Suppose that the government's goal is the raise cassava production by 20% to increase the export volume. Based on the elasticity calculated in b., by what percentage must price increase to reach this goal?
    d. If the quantity demanded for cassava increases by 12% when the price of potatoes increases 10%, without any calculation, what can you say about the relationship between cassava and potatoes? Also, calculate the cross-price elasticity of demand for cassava, with respect to the price of potatoes.

5. Suppose that the demand and supply of pencils are given by $Q^D = 30 - P$ and $Q^S = P$.
    a. Determine the equilibrium price and quantity.
    b. Calculate the price elasticity of demand at the equilibrium (use point elasticity).
    c. Calculate the price elasticity of supply at the equilibrium (use point elasticity).
    d. Discuss whether demand or supply is more elastic.

6. Discuss how the price elasticity of demand for gasoline could change over time. That is, would the elasticity be different in the long run, when compared to the elasticity in the short run?