**ASSIGNMENT # 1 Due Date: 17-09-2024**

**Answer the following questions**

i) When an individual’s income rises (while everything else remains the same), that person’s demand for a normal good (a) rises, (b) falls, (c) remains the same, or (d) any of the above.

ii) When an individual’s income falls (while everything else remains the same), that person’s demand for an inferior good (a) increase, (b) decreases, (c) remains unchanged, or (d) we cannot say without additional information.

iii) When the price of a substitute of commodity X falls, the demand for X (a) rises, (b) falls, (c) remains unchanged, or (d) any of the above.

iv) When both the price of a substitute and the price of a complement of commodity X rise, the demand for X (a) rises, (b) falls, (c) remains unchanged, or (d) all the above are possible.

v) There are 10,000 identical individuals in the market for commodity X, each with a demand function given by Qdx = ¼ 12- 2Px, and 1000 identical producers of commodity X, each with a function given by Qsx = ¼ 20Px

(a) Find the market demand function and the market supply function for commodity X.

(b) Find the market demand schedule and the market supply schedule of commodity X and from them find the equilibrium price and the equilibrium quantity.

(c) Plot, on one set of axes, the market demand curve and the market supply curve for commodity X and show the equilibrium point.

(d) Obtain the equilibrium price and the equilibrium quantity graphically and mathematically.

vi) There are 10,000 identical individuals in the market for commodity X, each with a demand function given by Qdx = ¼ 12- 2Px, and 1000 identical producers of commodity X, each with a function given by Qsx = ¼ 20Px. There is an increase in consumers’ incomes so that the market demand curve becomes QDx = 140,000 - 20,000Px and at the same time there is an improvement in the technology of producing commodity X so that the new market supply curve becomes QSx = 40,000 + 20,000Px. Everything else remains the same.

(a) Show the new market demand curve (Dx) and the new market supply curve (Sx) on the graph.

(b) What are the new equilibrium price and the new equilibrium quantity for commodity X?

viii) Suppose that from the condition of equilibrium in (v) above, the government decides to grant a subsidy of $1 on each unit of commodity X produced to each of the 1000 identical producers of commodity X. (a) What effect does this have on the equilibrium price and quantity of commodity X? (b) Do consumers of commodity X reap any benefit from this?

Suppose that from the equilibrium condition in (v) above, the government decides to collect a sales tax of $2 per unit sold, from each of the 1000 identical sellers of commodity X. (a) What effect does this have on the equilibrium price and quantity of commodity X? (b) Who actually pays the tax? (c) What is the total amount of taxes collected by the government?