**CHAPTER TWO**

**Market Forces : Demand And Supply**

**CONCEPTUAL AND COMPUTATIONAL QUESTIONS**

1. The X-Corporation produces a good (called *X*) that is normal good. Its competitor, Y-Corp., makes a substitute good that it markets under the name *“Y”*.

Good *Y* is an inferior good.

1. How will the demand for good *X* change if consumer incomes increase?
2. How will the demand for good *Y* change if consumer incomes increase?
3. How will the demand for good *X* change if the price of good *Y* decrease?
4. Is good *Y* a lower-quality product than *X* ? Explain
5. Good X is produced in a competitive market using input A. Explain what would happen to the supply of good X in each of the following situation:
6. The price of input A increases
7. An excise tax of $1 is imposed on good *X*.
8. An ad valorem tax of 5 percent is imposed on good *X*.
9. A technological change reduces the cost of producing additional units of good *X*.
10. Suppose the supply function for product X is given by $Q\_{x}^{s}=-50+0.5P\_{x}-5P\_{z} $
11. How much of product X is produced when $P\_{x}=\$500 and P\_{z}=\$30?$
12. How much of product X is produced when $P\_{x}=\$50 and P\_{z}=\$30?$
13. Suppose $P\_{z}=\$30.$ Determine the supply function and inverse supply function for good X. Graph the inverse supply function.
14. The demand for good X is given by

$$Q\_{x}^{d}=1,200-\frac{1}{2} P\_{x}+\frac{1}{4} P\_{y}-8P\_{z}+\frac{1}{10} M$$

Research shows that the prices of related good are given by $P\_{y}=\$5,900 and P\_{z} $while the average income of individuals consuming this product is *M* =$55,000

1. Indicate whether goods *Y* and *Z* are substitutes or complements for good *X*.
2. Is *X* an inferior or a normal good?
3. How many units of good *X* will be purchased when $P\_{x}=\$5,900?$
4. Determine the demand function and inverse demand function for good *X*.
5. The demand curve for product X given by $Q\_{x}^{d}=460-4P\_{x} $
6. Find the inverse demand curve.
7. How much consumer surplus do consumers receive when $P\_{x}=\$35?$
8. How much consumer surplus do consumers receive when $P\_{x}=\$25?$
9. In general, what happens to the level of consumer surplus as the price of a good falls?
10. Suppose demand and supply are given by $Q^{d}=50-P and Q^{s}=\frac{1}{2}P-10.$
11. What are the equilibrium quantity and price in this market?
12. Determine the quantity demanded, the quantity supplied, and the magnitude of the surplus if a price floor of $42 is imposed in this market.
13. Determine the quantity demanded, the quantity supplied, and the magnitude of the shortage if a price ceiling of $30 is imposed in this market. Also, determine the full economic price paid by consumers.
14. Use the accompanying graph to answer these questions.
15. Suppose demand is D and supply is$ S^{0}.$ If a price ceiling of $26 is imposed, what are the resulting shortage and full economic price?
16. Suppose demand is D and supply is $S^{0} $. If a price floor of $12 is imposed, what is the resulting surplus? What is the cost to the government of purchasing any and all unsold units?



1. Suppose demand is D and supply is $S^{0} $, so that the equilibrium price is $10. If an excise tax of $6 is imposed on this product, what happens to the equilibrium price paid by consumers? The price received by producers? The number of units sold?
2. Calculate the level of consumer and producer surplus when demand and supply are given by D and $S^{0} $, respectively.
3. Suppose demand is D and supply is $S^{0} $. Would a price ceiling of $2 benefit any consumers? Explain.
4. Suppose demand and supply are given by

$$Q\_{x}^{d}=7-\frac{1}{2}P\_{x } and Q\_{x}^{s}=\frac{1}{4} P\_{x}-\frac{1}{2} $$

1. Determine the equilibrium price and quantity. Show the equilibrium graphically.
2. Supposed a $6 excise tax is imposed on the good. Determine the new equilibrium price and quantity.
3. How much tax revenue does the government earn with the $6 tax?