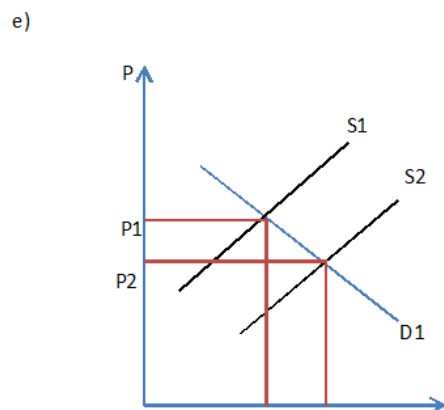
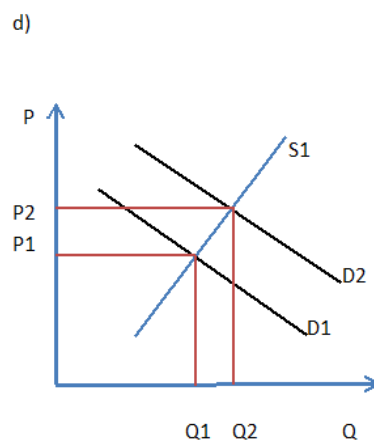
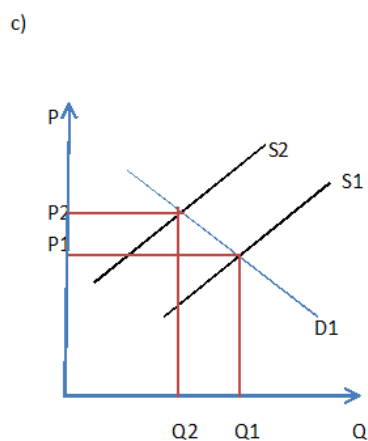
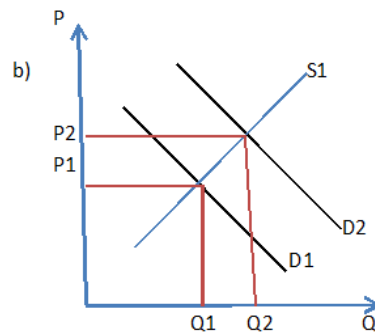
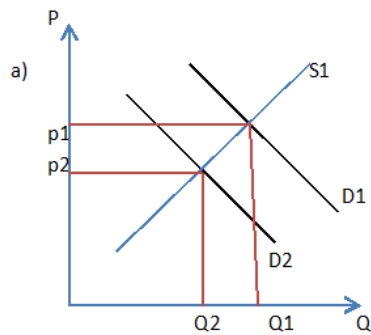


### Chapter 3:

#### 5.4:



- a) The risk of heart attack will change people's preferences and this will cause demand to go down. This will then lead to a decrease in equilibrium quantity and price.
- b) The decrease in price of complementary product will lead to an increase in quantity demanded, thus increasing equilibrium price and quantity.
- c) The increase in price of chicken feed will lead to an increase in the cost of supply, and this will decrease supply, hence lower quantity and higher prices.
- d) The demand for eggs will increase. Equilibrium price and quantity will also rise.
- e) Supply will increase, and equilibrium price will decrease.

5.5

A)

The following table with quantity demand and supply information:

The QD will be derived when inserting the price 5:

$$Q_d = 100 - 20P$$

$$Q_d = 100 - 20(5)$$

$$Q_d = 100 - 100$$

$$Q_d = 0$$

$$Q_d = 100 - 20P \quad Q_d = 100 - 20(5) \quad Q_d = 100 - 100 \quad Q_d = 0$$

The QS will be derived when inserting the price 5:

$$Q_s = 10 + 40P$$

$$Q_s = 10 + 40(5)$$

$$Q_s = 10 + 200$$

$$Q_s = 210$$

$$Q_s = 10 + 40P$$

$$Q_s = 10 + 40(5)$$

$$Q_s = 10 + 200$$

$$Q_s = 210$$

Therefore, the table will be filled as shown through above calculations:

Tabular Data:

Thus, in the above-shown table, as demand is less or negative to that of supply, there occurs the situation of EXCESS SUPPLY.

B)

equilibrium is that point where the quantity demand and quantity supply are equal:

$$Q_d = Q_s$$

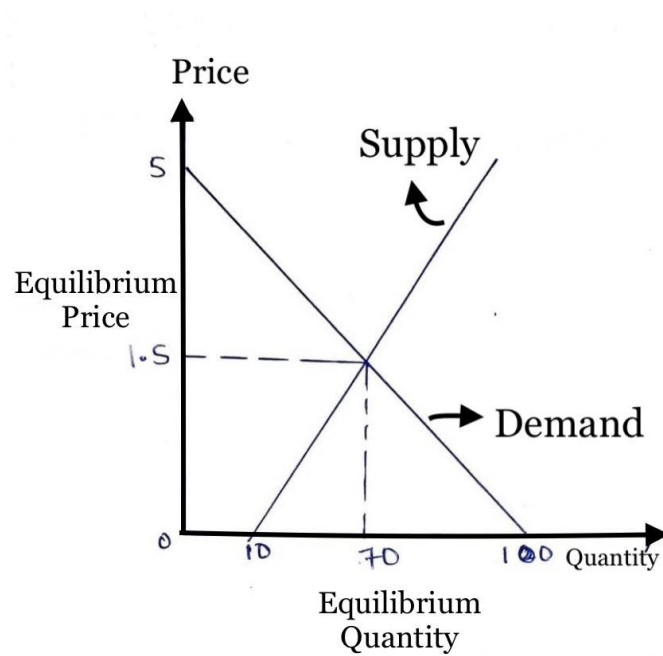
$$100 - 20P = 10 + 40P \quad 100 - 20P = 10 + 40P$$

$$90 = 60P \quad 90 = 60P$$

$$P = 1.5 \text{ (EQUILIBRIUM - PRICE)} = 1.5 \text{ (EQUILIBRIUM - PRICE)}$$

$$Q = 70 \text{ (EQUILIBRIUM - QUANTITY)} \quad Q = 70 \text{ (EQUILIBRIUM - QUANTITY)}$$

c)



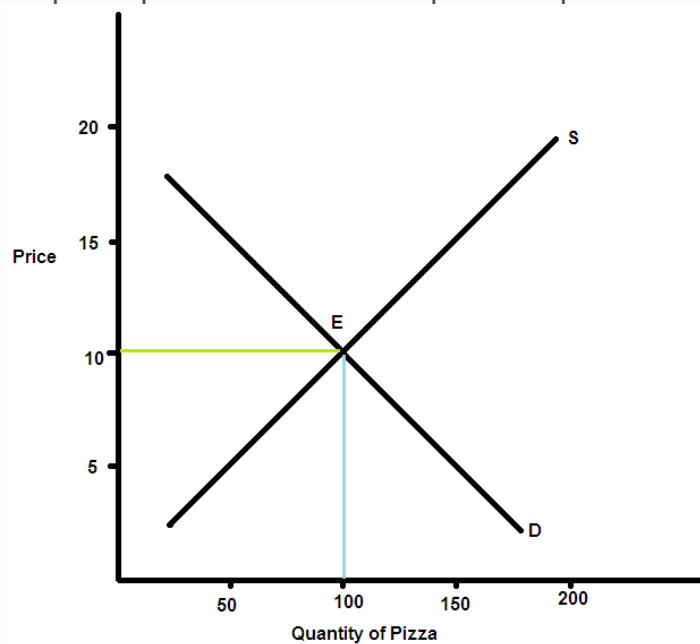
5.7:

a) Given that,

Market demand for pizza  $Q_d = 300 - 20P$

Market supply for pizza  $Q_s = 20P - 100$

Graphical presentation of the equilibrium price



b)

$$Q_d = Q_s \implies 300 - 20p = 20p - 100 \implies 300 + 100 = 20p + 20p \implies P = 10 \implies Q = 300 - 20(10) \implies Q = 100$$
$$Q_d = Q_s \implies 300 - 20p = 20p - 100 \implies 300 + 100 = 20p + 20p \implies P = 10 \implies Q = 300 - 20(10) = 100$$

c)

$$Q_d = 300 - 20P \implies Q_d = 300 - 20(15) = 300 - 300 = 0$$

Similarly  $Q_s = 20P - 100 \implies Q_s = 20(15) - 100 = 300 - 100 = 200$

$$Q_d = 300 - 20P \implies Q_d = 300 - 20(15) = 300 - 300 = 0$$

Similarly  $Q_s = 20P - 100 \implies Q_s = 20(15) - 100 = 300 - 100 = 200$

Thus at price 15.0 the leading to a situation of surplus in the economy.

At this level since the demand is less than the supply, the price will start falling until the  $Q_d = Q_s$ .

d)

Suppose the price of the hamburgers, a substitute for pizza doubles, This leads to a doubling of the demand for pizza. Thus, the new market demand will be twice the old demand i.e  $Q_d' = 2Q_d$ .

$$Q_d' = 2(300 - 2P) \implies 600 - 40P$$
$$Q_d' = 2(300 - 2P) = 600 - 40P$$

e)

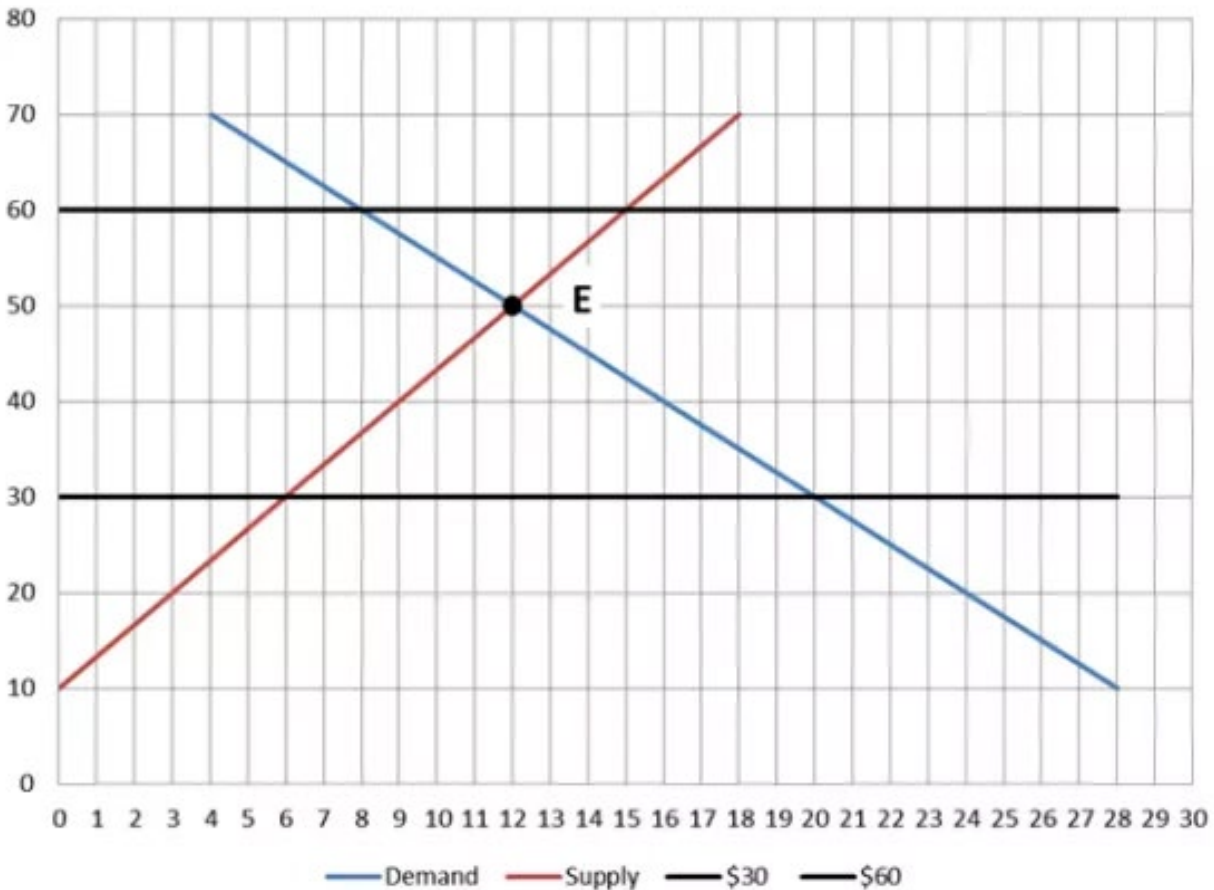
$$Q_d' = Q_s$$

$$600 - 40P = 20P - 100 \implies 60P = 700 \implies P = 11.67 \approx 12$$
$$Q_d' = 600 - 40P \implies 600 - 40(11.67) \implies 600 - 466.8 \implies 133.2 \approx 133$$

$$600 - 40P = 20P - 100 \implies 60P = 700, P = 11.67 \approx 12$$
$$Q_d' = 600 - 40P = 600 - 40(11.67) = 600 - 466.8 = 133.2 \approx 133$$

Thus the new equilibrium price is approx 12 whereas the new equilibrium quantity is 133.

5.9:



The demand for the good is an inverse relationship between price and quantity. The equation of the demand curve gives the quantity demanded as a function of price. The graphical relationship between price and quantity demanded is depicted by the demand curve. Any point on the demand curve shows the number of consumer demands for any particular price. The inverse demand curve represents price as a function of quantity.

The supply for good is the direct relationship between price and quantity. The equation of the supply curve gives the quantity supplied as a function of price. The graphical relationship between price and quantity supplied is depicted by the supply curve. Any point on the supply curve shows the quantity producers supply for any particular price. The inverse supply curve represents price as a function of quantity.

The equilibrium is the point at which the quantity demanded by the consumer equals the quantity supplied by the producers at a particular price. It is the point of intersection between demand and supply curve.

The demand and supply of the wireless keyboard are given in the figure below:

The equilibrium occurs where the demand curve intersects the supply curve. This occurs at point E. At point E, the equilibrium quantity is 12 units and the equilibrium price is \$50 per unit.

Suppose that the market price is set at \$60. At \$60, from the demand curve, the quantity demanded is 8 units and the quantity supplied is 15 units. Therefore, there will be excess supply in the economy of 7 units. This excess supply will prompt the supplier to decrease price of the good. The decrease in price will increase quantity demanded. The economy will move back to the equilibrium point E.

Similarly, suppose that the market price is set at \$30. At \$30, from the demand curve, the quantity demanded is 20 units and the quantity supplied is 6 units. Therefore, there will be excess demand in the economy of 14 units. This excess demand will push the price up as some consumers will be willing to pay more for the good. The increase in price will increase quantity supplied. The economy will move back to the equilibrium point E.