**ECON 205**

**WORKSHEET 2**

1. The demand curve for product X is given as Q = 1500 – 50P

Write the equations for total revenue and average revenue.

2. Consider the following demand and supply curves for a certain product:

Qd = 30 – 3P; Qs = -10 + 2P

a. Determine the equilibrium price and quantity.

b. Suppose the supply shifts to Qs = -5 + 2P, with no change in demand. Determine the new equilibrium price and quantity. Use the graph, confirm your answer.

3. Suppose the government decides a levy a $200 per gallon tax on the sellers of gasoline.

P= 2000 – 10Q P = 40Q

a) What are the equilibrium price and quantity after the tax?

b) How much money goes to government?

c) What is the tax burden for consumer?

d) What is the tax burden for seller?

4. Consider the following demand and supply curves for a certain product:

P = 1000 – 0,05Q; P = 100+ 0,1Q

a. Determine the equilibrium price and quantity.

b. Compute CS, PS and TS. Draw the related figure.

5. Consider the following demand and supply curves for a certain product:

Qd = 28 – 3P; Qs = -12 + 2P

a. Determine the equilibrium price and quantity.

b. Suppose the supply shifts to Qs = -2 + 2P, with no change in demand. Determine the new equilibrium price and quantity. Use the graph, confirm your answer.

6. Fill in the following table, drawing new curves on the graphs to aid you. Show the initial effects of the events on each market. For shift of the demand curve (D), shift of the supply curve (S), equilibrium price (Pe) and the equilibrium quantity (Qe), use (+) or (-) to show increase or decrease, for no change, use (0). If the effect cannot be determined from the information, use (?).

Market Events D S Pe Qe

 P S

a. DVD Cost of producing DVD increase

 D

 Q

 P

b. Natural Gas the prices of electricity rise S

 stoves

 D

 Q

 P

c. Backpacks Students prefer backpacks for carrying S

 school supplies; new materials rise

 costs of production.

 D

 Q

 P

d. Automobiles Substantially lower wages S

 are paid to autoworkers, autodriver

 population increases.

 D

 Q

7. Suppose that student demand for tickets to a concert is as follows:

Price Quantity Demanded

$2 8000

 4 5000

 6 2500

 8 1500

a. With seating capacity fixed at 5000 seats, would there be either excess demand or excess supply at a ticket price of $6?

b. What ticket price should be set to ensure that all seats are taken (so that there is neither a surplus nor a shortage of seats)?

c. Suppose that a very popular performer is booked, causing the quantity of tickets demanded at each price to double. What is the new equilibrium price?

8. Assume the following demand and supply functions:

Qd = 20 – 5p

Qs = - 12 + 4p

a. Determine the equilibrium price and quantity.

b. Plot the demand and supply curves on the graph and confirm your answer.

c. Suppose the demand shifts to Qd = 40 - 5p, with no change in supply. Determine the new equilibrium price and quantity. Use the graph and also solve algebraically.

d. Suppose that the price had been held constant at its original level in (b). Would a surplus or shortage emerge, and how large would it be?

9. The supply and demand schedules for the shoe market are given below

 P Qs Qd

$10 100 400

 20 200 200

 30 300 100

 40 400 50

a. Draw the figure of demand and supply curves.

b. What are the equilibrium price and quantity?

c. If the price level is $30, what would occur?

e. Suppose the government establishes a price of $30, what would occur?

10. The demand curve for a firm’s product is given by the equation

 Q = 30 – 0,5 P

1. Specify the firm’s total revenue function.
2. Solve for the revenue-maximizing level of output.
3. Prove that you have reached a point of revenue maximization.
4. Determine the revenue-maximizing price.

11**.** Given a total revenue function

 TR = 100 Q – 0,8 Q2

1. Determine the revenue-maximizing output level.
2. Determine the price associated with maximizing revenue.
3. Determine the demand function.

 d) Compare the slope of the demand and the marginal revenue functions

12. Suppose the government decides a levy a 50 cent per gallon tax on the buyers of gasoline. P= 100-2Qd and P=3Qs What are the equilibrium price and quantity after the tax? What are the consumer price and seller price?

13. Assume the following demand and supply functions:

Qd = 12 – 2p

Qs = - 3 + p

a. Determine the equilibrium price and quantity.

b. Plot the demand and supply curves on the graph and confirm your answer.

c. Suppose the government imposed price ceiling at a price of 4$, what is the amount of deadweight loss?