

Homework II
(Submission date: Nov., 1 2024)
(Late submissions will not be evaluated)

1. Consider the following demand function for good x:

$$Q_x = (Y + P_z) / 2 P_x$$

where Q_x is the quantity demanded of X, Y is money income of consumers, P_z the price of some other good Z and P_x is the price of X itself.

- a. Given $P_z = 2$, $Y = 100$, plot the demand curve for X for different values of P_x . (For ex. take $P_x = 1, 2, 3$ etc.)
- b. Given $P_z = 4$, $Y = 100$, plot the demand curve for X for different values of P_x on the same diagram as in (a)
- c. Given $P_z = 2$, $Y = 200$, plot the demand curve for X for different values of P_x on the same diagram as in (a)
- d. From your results in (b) and (c),
 - i. are X and Z substitutes or complements?
 - ii. is X a normal good or an inferior good?

2. In each of the cases below, determine the effect of the given event on the specified market by drawing graphs.

- a. 'Average household incomes in Germany are expected to increase by 5 % this year and hotel bed prices in Greece are expected to fall by 10% this year'
Market for hotel beds in Antalya, market for hotel beds in Greece
- b. 'The government has decided to subsidize the imported inputs for textile production if the product is exported'
Market for Turkish textiles that are exported, domestic Turkish market for textiles
- c. 'The government decided to double the private consumption tax imposed on newly purchased cars'
Market for new cars, market for second-hand cars

3. You are given the demand and supply equations in the shirts market.

$$Q_d = 24000 - 500 P \text{ and } Q_s = 6000 + 1000 P$$

where Q_d is quantity demanded of shirts, P is price of good shirts and Q_s is the quantity supplied of shirts.

- a. Find the equilibrium price and the equilibrium quantity.
- b. Roughly draw demand and supply curves and show the equilibrium price and equilibrium quantity clearly.
- c. If people think that they do NOT like shirts that much, which of the following might be the new demand curve? Explain briefly.
 - (1) $Q_d = 21000 - 500P$
 - (2) $Q_d = 27000 - 500P$
- d. Find the new equilibrium price and the equilibrium quantity.

e. Show the new equilibrium price and the equilibrium quantity on the graph you draw in 'b'.

GO TO 'b':

f. Two new shops that sell shirts open up in town, which of the following might be the new supply curve? Explain briefly.

(1) $Q_s = 3000 + 1000P$ (2) $Q_s = 9000 + 1000P$

g. Find the new equilibrium price and the equilibrium quantity.

4. Suppose there are only 5 buyers and 5 sellers in the market for gasoline. You are given the following data about the market:

Price per gallon (TL.)	5	4	3	2	1
Quantity demanded (gallons per day)					
Ali	1	2	3	4	5
Bahar	0	1	1	1	2
Can	2	2	3	3	4
Demet	1	3	4	4	6
Ersan	1	2	2	3	5

Price per gallon (TL.)	5	4	3	2	1
Quantity supplied (gallons per day)					
Aydın	3	3	3	3	3
Bekir	7	5	4	4	2
Cem	6	4	3	3	1
Deniz	6	5	4	3	0
Erol	4	2	2	2	1

a. Draw the market and supply curves.

b. Find the equilibrium price and equilibrium quantity graphically.

c. The government sets the market price as 1 TL. Is it a price ceiling or price floor? Find the size of the shortage/surplus at that price. What is the quantity exchanged at 1 TL.?