

## Homework Assignment 1

Bring your homework to the classroom before the lecture begins

Due date: Oct 13, Wednesday, 2021

You can choose to answer the questions in English or Chinese, whichever you feel more comfortable with. You are encouraged to discuss with your classmates, but please keep in mind that for the final exam you have to do it alone. You will suffer 20% deduction on the grade of this assignment for each delayed day of submission (Deadline: due date 6:40 PM sharp).

Please motivate your answers with details.

1. You have already purchased (non-refundable and unresalable) tickets to a concert on Friday night. A friend also invites you to her birthday party on Friday. While you like your friend, you politely decline because you really want to go to the concert.

(a) You learn that your friend is serving flank steak at her party, all-you-can eat and at no charge. Flank steak is your favorite food. Should this affect your decision to go to the concert? Explain by using the term "opportunity cost."

(b) Suppose instead that you notice that the non-refundable concert ticket (that you already purchased) cost you \$10; previously you had mistakenly believed the price was \$100. Should learning this information affect your decision to go to the concert?

2. It is the night before your economics final exam and you must decide how many hours to study. The total benefits in the following table shows

how many more points you will learn because of increased knowledge. The total cost columns shows how many points you will lose because of careless errors due to lack of sleep.

Hours Spent Studying	Total Benefits	Marginal Benefits	Total Cost	Marginal Cost
0	0	-	0	-
1	10	10	0	0
2	16	6	3	3
3	20	4	8	5
4	20	0	15	7

- (a) If you study in an optimal way, how many points will you earn on the test?
- (b) Explain how you can find the optimal number of hours for which you should study by using the marginal benefits and marginal costs columns.

3. Suppose that we have 8 people who want to rent an apartment. Their reservation prices are given below.

- (a) Plot the market demand curve in a graph.

Person	=	A	B	C	D	E	F	G	H
Price	=	40	15	30	35	18	10	25	5

- (b) Suppose that the supply of apartments is fixed at 5 units. In this case there is a whole range of prices that could be equilibrium prices. What is the highest price that would make the demand of apartments equal to 5 units? Please show it on your graph.
- (c) What is the lowest price that would make the market demand equal to 5 units? Please show it on your graph.
- (d) With a supply of 4 apartments, which of the people A to H end up getting apartments?
- (e) What if the supply of apartments increases to 6 units. What is the range of equilibrium prices?

4. Suppose now that the market demand is as in question 2, but a monopolist owns all the apartments and that he is trying to determine which price and quantity maximize his revenues.

(a) Complete the following table with the maximum price and revenue that the monopolist can make if he rents out 1,2,...,8 apartments. (Assume that he must charge one price for all apartments.)

Number	1	2	3	4	5	6	7	8
Price	?	35	?	?	?	?	?	5
Revenue	?	70	?	?	?	?	?	?

*(the second column means that if the monopolist rents out 2 apartments with price 35, he would get revenue of 70)*

(b) Which of the people A-H would get apartments?

(c) If the monopolist could charge each individual a different price, and he knew the reservation prices of all the individuals, what is the maximum revenue he could make if he rented all 5 apartments?

(d) If 5 apartments were rented, which individuals would get the apartments?

(e) How does the outcome in (d) compare to the market outcome?

5. In the class we discussed that a tax on landlords would not get passed along to the renters. Now let's think about what would happen if instead the tax was imposed on renters?

(a) Determine the maximum equilibrium price if there are 5 apartments to be rented.

(b) How does this outcome compare to what happens if the tax is imposed on the landlords?