Microeconomics In-class Quiz 2
Spring 2025

Student ID:

Name:

Instructions

1. Do NOT flip over this page until every student receives this quiz. Your TA will let you know when you can start.
2. During this closed-book quiz, you cannot consult any materials.
3. If you are unable to explain your reasoning in English, it is okay to write in Korean.
4. Should you need more spaces, use the backside of the page, with clearly indicating the relevant quiz number.

Honor Code: Cheating on exams or quizzes, plagiarizing someone else's answers as one's own, or any other instance of academic dishonesty violates the standards of academic integrity.

Confidentiality Code: Sharing the information of the exam or quiz contents with other students in any form and medium is strongly prohibited, as it raises information inequity.

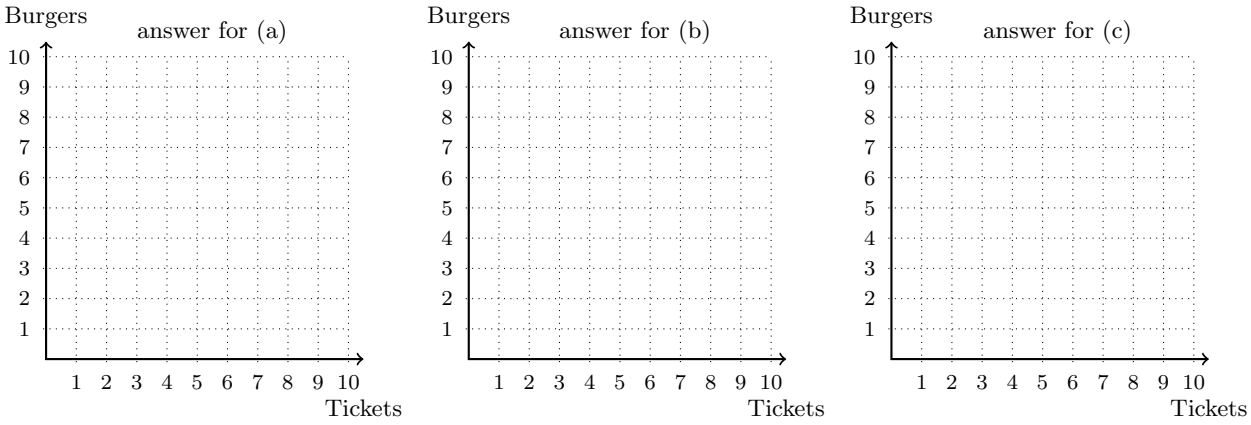
I, _____, consent to the Honor Code and the Confidentiality Code.
(write your name)

1. With weekly money allowance of \$100, Sheldon buys basketball tickets and hamburgers. A basketball ticket costs \$10, and a hamburger costs \$20.

(a) Draw a budget constraint (BC) on a figure below.

(b) Draw a BC when there are only four basketball games per week.

(c) Draw a BC when the burger price is discounted to \$10 from the 4th one.



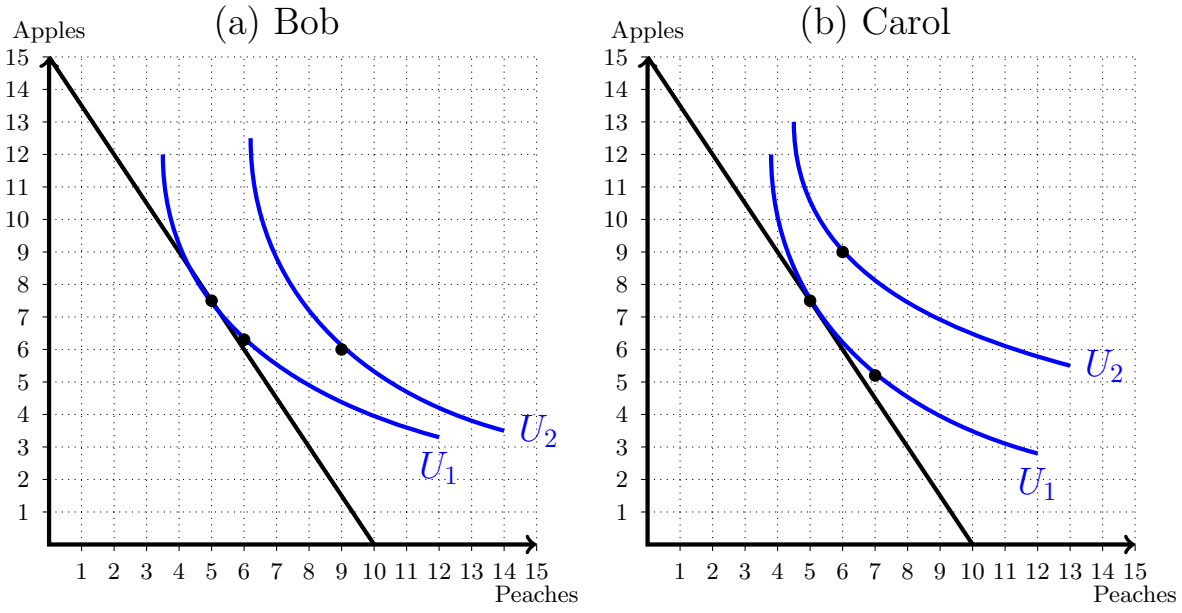
2. Evaluate whether the following statement is true or false. Assume that there are only two consumption goods.

(a) Both goods can be inferior goods.

(b) If both goods are normal goods, a price decrease in one good leads to consumption increases in both goods.

3. A farmer can grow corn, wheat, or soybeans on her land. The profit she could have earned from soybeans is \$40,000, and that from wheat is \$57,000. If she chooses to grow corn, what is her opportunity cost?

4. The following two graphs show preferences on apples and peaches of Bob and Carol. Each consumer has a budget of \$30. The unit price of apples is \$2, and the unit price of peaches is \$3.



(a) Suppose the price for peaches decreases to \$2. Find the new optimal consumption bundle by drawing a new budget constraint. Write down how much peach consumption has changed in the first column of the table below. (For example, if the initial peach consumption was 10, and the new peach consumption is 13, then write down "+3".)

(b) Write down the substitution effect of the peach price change in the second column of the table below.

(c) Write down the income effect of the peach price change in the third column of the table below.

	(a) Total Effect of Price Change	(b) Substitution Effect of Price Change	(c) Income Effect of Price Change
Bob			
Carol			

(d) Evaluate whether peaches are normal goods or inferior goods, for each of two consumers.

5. Suppose the production function for a small plumbing company is: $Q = 2KL$, where Q is the number of water heaters installed, K is the number of machine hours from plumbing supplies, and L is the number of plumbers. The wage rate is \$20 per hour, and the rental rate of capital is \$40 per hour.

(a) What's $MRTS_{LK}$, the marginal rate of technical substitution between labor and capital?

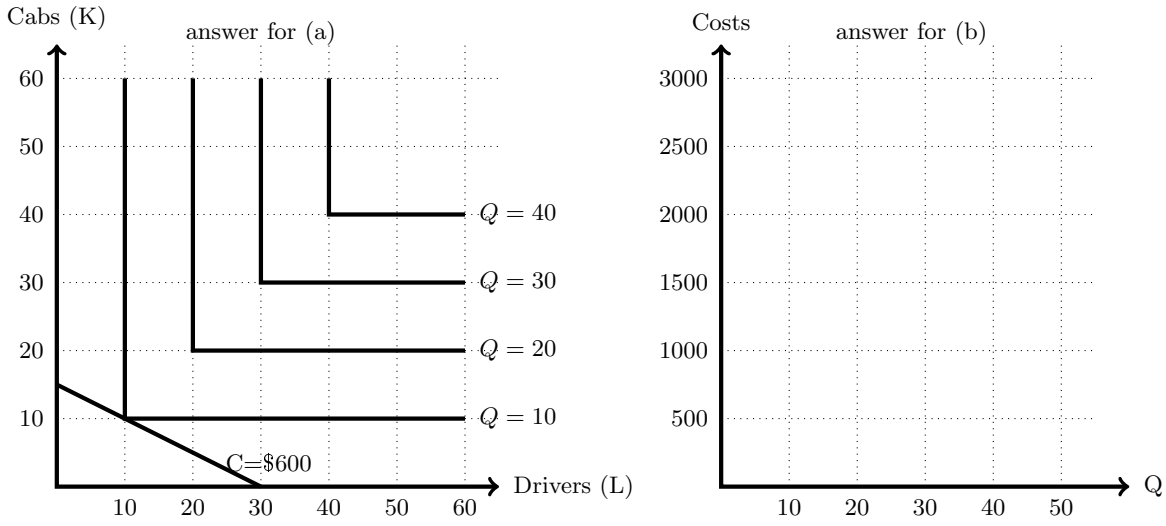
(b) To minimize the production costs, $MRTS_{LK}$ should be equal to the input price ratio. For every unit of capital, how many units of labor the company should use? (Hint: Rearrange the firm's cost minimization condition so that L can be a function of K.)

(c) If the company has a contract to install 100 new water heaters, what is the cost-minimizing bundle of capital and labor?

6. The following figure (left) shows isoquants and one isocost line for a local taxicab company. The wage rate of a driver is \$20 per hour, and the rental rate of a taxicab is \$40 per hour.

(a) Graph the expansion path on the figure.

(b) From the expansion path, derive the company's cost function.



7. The following table shows the relationship between the labor input and the product output in the short run. Fill out all the blanks.

Labor Input	**Total Product**	**Marginal Product**	**Average Product**
0	0	-	-
1		70	
2	134		
3			63
4		51	
5			57
6	324		