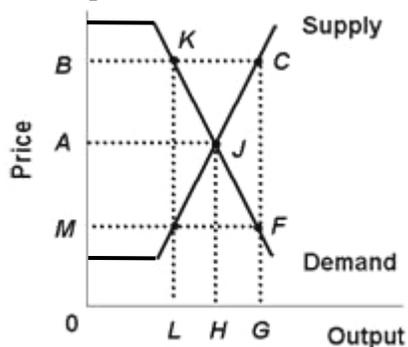


EC101 DD/EE. Problem Set 5 (New version: Q13 and Q16 have been simplified.)

Multiple Choice [MC] questions have only one correct answer. Other kinds of questions may have more than one correct answer. You should understand **why** your answers are correct. If you don't understand the meaning of a question, you may write to your own TF, but do not expect him/her to give you answers. The problem set will not be graded, but the way you discuss the problems in your discussion section will affect your discussion-section score.

- At the equilibrium of a perfectly competitive market, discuss whether the following statements are true or false:
 - Consumer surplus is maximized and so is producer surplus
 - The sum of producer surplus and consumer surplus is maximized
 - Consumer surplus is equal to producer surplus
 - Each person is as satisfied as she/he could be
- [MC] Marginal cost is increasing while total cost is:
 - Positive and increasing at a decreasing rate
 - Positive and increasing at an increasing rate
 - Positive and decreasing at a decreasing rate
 - Negative and decreasing at an increasing rate

- [MC] Refer to the diagram below. In this competitive market, combined consumer and producer surplus is maximized at:

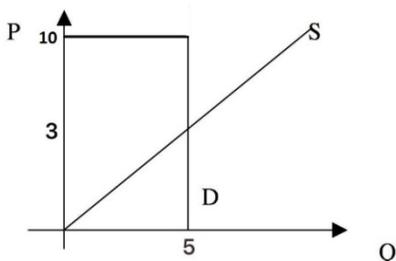


- Price M
 - Price B
 - Output G
 - Output H
- [MC] When the allocation of resources is Pareto efficient,
 - consumer surplus is maximized
 - society is providing the greatest good to the greatest number.
 - no consumer would prefer someone else's consumption bundle to his or her own.
 - it is not feasible to make someone better off without making someone worse off.
 - Fill in the blanks:
 - The total cost of 10 potatoes is the sum of the _____ of each potato plus the _____ cost.
 - The marginal cost of the 10th potato is the _____ of 10 potatoes minus the _____ of 9 potatoes.

6. [MC] Suppose Mike and John are two brothers who are given \$110 to split. Given this information, which of the following is an example of Pareto efficiency?
- They each get \$55
 - Mike is older, so they decide Mike should get a bigger share. Mike gets \$70 while John gets \$40.
 - Mike takes the whole \$110 and John gets nothing.
 - ALL** of the above



7. Suppose Napoleon is the only producer of high-heeled men's shoes.
- Is Napoleon a price taker or a price setter in the market for shoes?
 - Does Napoleon have a supply curve?
8. Suppose Fantine finds a very pretty satin shoe in a garbage bin (only the left shoe). A few feet away, Cosette finds the matching right shoe. Fantine is willing to pay \$20 for a pair of satin shoes, while Cosette is only willing to pay \$10. A single shoe is useless to anyone.
- Each girl has one shoe. Is this Pareto efficient?
 - What situation(s) would be Pareto efficient?
 - What situation(s) would maximize economic surplus?
9. [MC] Suppose there are three identical vases available to be purchased. Buyer 1 is willing to pay \$30 for one, buyer 2 is willing to pay \$25 for one, and buyer 3 is willing to pay \$20 for one. If the price is \$25, how many vases will be sold and what is the value of consumer surplus in this market?
- One vase will be sold, and consumer surplus is \$30
 - One vase will be sold, and consumer surplus is \$5
 - Two vases will be sold, and consumer surplus is \$5
 - Three vases will be sold, and consumer surplus is \$0
10. In the market described below, what's producer surplus? And consumer surplus?



11. Draw total costs graphs for firms producing good X with the following production characteristics. Put “Total Cost” on the vertical axis (y-axis) and “Quantity produced” on the horizontal axis (x-axis). (Note: The most important part of this problem is that you draw the correct shape of the total cost curve.)
- Firms with increasing marginal costs
 - Firms with constant marginal costs
 - Firms with decreasing marginal costs

12. Below is a chart with a table with total costs a firm will pay at different production levels. Answer the following questions using the table. How much will the firm produce (supply) and what will the producer surplus be when the price is \$8? \$7? \$6? \$5? \$4?

Units (\$)	Total Cost (\$)
0	20
1	25
2	30
3	36
4	43
5	50
6	58
7	69
8	72

13. Michael likes egg rolls. Draw his total utility curve if as he consumes more and more egg rolls if:
- His marginal utility is positive and increasing.
 - His marginal utility is positive and constant.
 - His marginal utility is positive and decreasing.
14. True or false? Discuss.
- Marie sells potatoes in a competitive market. The cost of bringing 10 potatoes to sell to the market is higher than the cost of bringing just 2. Therefore the 10th potato will be sold at a higher price than the 2nd potato.
 - Every type of firm (competitive and noncompetitive) has a supply curve.
 - Buying or selling a quantity greater than the equilibrium quantity reduces welfare.
15. Can producer surplus ever be negative? If yes, can you think of an example? If no, why not?
16. In the free city of Karalis, the evil Zaru controls the access to the public beach, and demands a payment to pass through his dominion. The government, worried about the effect of the payment on tourism, passes a law that forces Zaru to let people access the beach for free.
- Is the new law a Pareto improvement? Explain on your answer.
 - What can you say about the total surplus of all the people in Karalis before and after the new law is passed?