

2012 AP[®] MICROECONOMICS FREE-RESPONSE QUESTIONS

MICROECONOMICS

Section II

Planning time—10 minutes

Writing time—50 minutes

Directions: You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

1. Steverail, the only provider of train service operating between two cities, is currently incurring economic losses.
 - (a) Using a correctly labeled graph, show each of the following.
 - (i) Steverail's loss-minimizing price and quantity, labeled P_m and Q_m , respectively
 - (ii) The area of economic losses, shaded completely
 - (iii) The allocatively efficient quantity, labeled Q_e
 - (b) If Steverail raised the price above P_m identified in part (a)(i), would total revenue increase, decrease, or not change? Explain.
 - (c) Assume a per-unit subsidy is provided to Steverail.
 - (i) Will Steverail's quantity increase, decrease, or not change? Explain.
 - (ii) Will consumer surplus increase, decrease, or not change?
 - (d) Assume instead that a lump-sum subsidy is provided to Steverail. For the short run, answer the following.
 - (i) Will the deadweight loss increase, decrease, or not change? Explain.
 - (ii) Will Steverail's economic losses increase, decrease, or not change?

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2. Theresa consumes both bagels and toy cars.

Quantity of Bagels	Marginal Utility from Bagels (utils)	Quantity of Toy Cars	Marginal Utility from Toy Cars (utils)
1	8	1	10
2	7	2	8
3	6	3	6
4	5	4	4
5	4	5	3
6	3	6	2

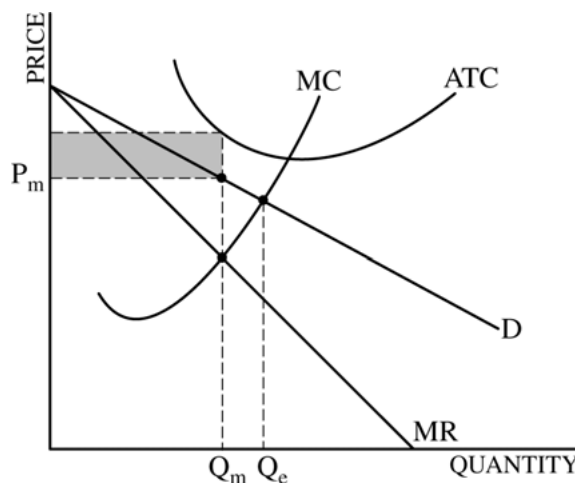
- (a) The table above shows Theresa's marginal utility from bagels and toy cars.
- What is her total utility from purchasing three toy cars?
 - Theresa's weekly income is \$11, the price of a bagel is \$2, and the price of a toy car is \$1. What quantity of bagels and toy cars will maximize Theresa's utility if she spends her entire weekly income on bagels and toy cars? Explain your answer using marginal analysis.
- (b) Assume that the price of wheat, an input for the production of bagels, increases. Will Theresa's demand for bagels increase, decrease, or not change? Explain.
- (c) Suppose that Theresa's income elasticity for bagels is -0.2 . Does the value of Theresa's income elasticity indicate that bagels are normal goods, inferior goods, substitutes, or complements?
- (d) Suppose that when the price of toy cars increases by 10 percent, Theresa buys 5 percent fewer toy cars and 4 percent less of a different toy, blocks. Calculate the cross-price elasticity for toy cars and blocks and indicate if it is positive or negative.

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Question 1

10 points (5 + 1 + 2 + 2)

(a) 5 points:



(i) 3 points:

- One point is earned for a correctly labeled downward-sloping demand curve and a downward-sloping marginal revenue curve below the demand curve.
- One point is earned for identifying the profit-maximizing quantity, Q_m , at $MR = MC$.
- One point is earned for identifying price, P_m , above Q_m on the demand curve.

(ii) 1 point:

- One point is earned for shading the area of economic loss.

(iii) 1 point:

- One point is earned for identifying the allocatively efficient quantity, Q_e , at $MC = D$.

(b) 1 point:

- One point is earned for stating that the total revenue would decrease because the demand is price elastic in that range of the demand curve where $MR > 0$.

(c) 2 points:

- One point is earned for stating that the quantity will increase because the subsidy will cause the MC curve to shift downward and intersect the MR curve at a larger quantity.
- One point is earned for stating that the consumer surplus will increase.

(d) 2 points:

- One point is earned for stating that the deadweight loss will not change because the lump-sum subsidy does not change the profit-maximizing quantity.
- One point is earned for stating that economic losses will decrease.