



## **AP<sup>®</sup> Microeconomics 2012 Free-Response Questions**

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## 2012 AP<sup>®</sup> 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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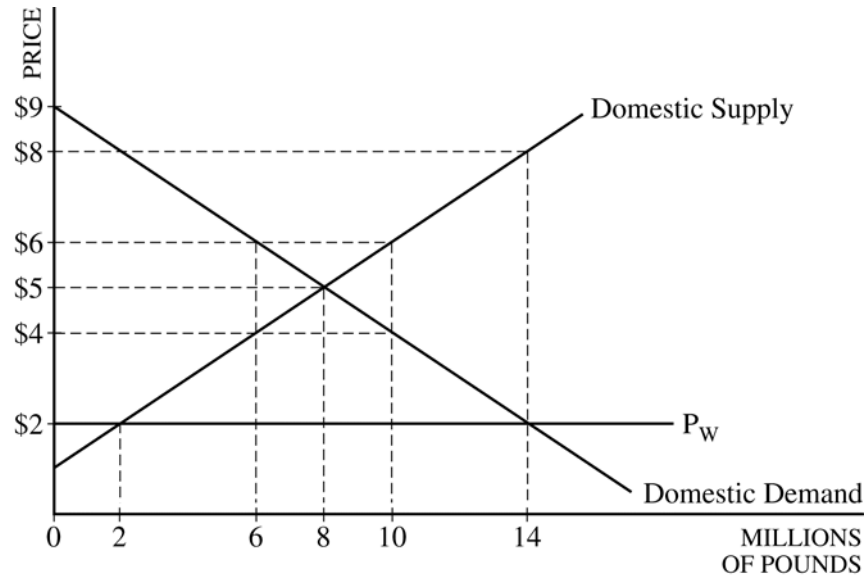
2. Theresa consumes both bagels and toy cars.

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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3. Sugar is freely traded in the world market. Assume that a country, Loriland, is a price taker in the world market for sugar. Some of the sugar consumed in Loriland is produced domestically while the rest is imported. The world price of sugar is \$2 per pound. The graph below shows Loriland's sugar market, and  $P_W$  represents the world price.



- (a) At the world price of \$2 per pound, how much sugar is Loriland importing?
- (b) Suppose that Loriland imposes a per-unit tariff on sugar imports and the new domestic price including the tariff is \$4.
- Identify the new level of domestic production.
  - Calculate the domestic consumer surplus for Loriland. You must show your work.
  - Calculate the total tariff revenue collected by the government. You must show your work.
- (c) Given the world price of \$2, what per-unit tariff maximizes the sum of Loriland's domestic consumer surplus and producer surplus?

**STOP**

**END OF EXAM**