

## 2012 AP® MICROECONOMICS FREE-RESPONSE QUESTIONS

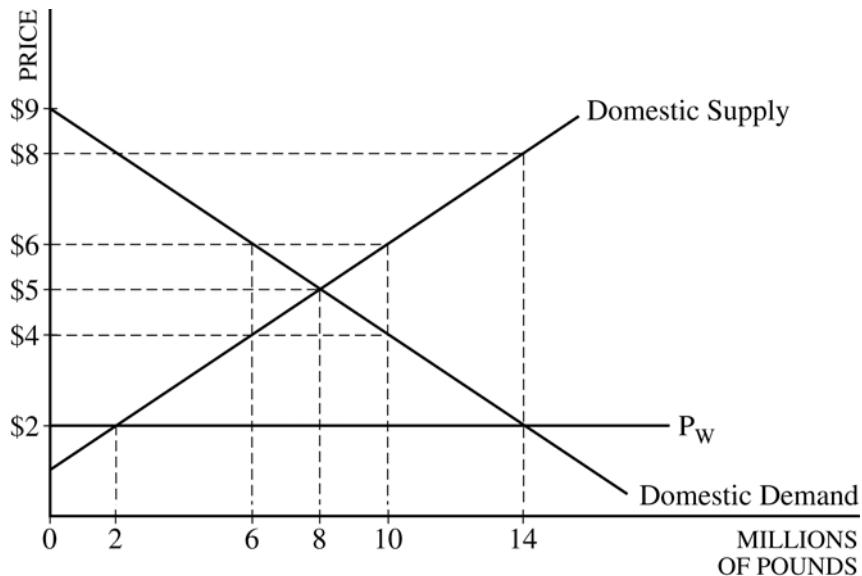
2. Theresa consumes both bagels and toy cars.

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.
- (i) What is her total utility from purchasing three toy cars?
  - (ii) 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.

## 2012 AP® MICROECONOMICS FREE-RESPONSE QUESTIONS

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**

**AP® MICROECONOMICS  
2012 SCORING GUIDELINES**

**Question 2**

**6 points** (3 + 1 + 1 + 1)

(a) 3 points:

- One point is earned for determining the total utility, which is 24.
- One point is earned for stating that three bagels and five toy cars will be purchased.
- One point is earned for explaining that with this combination of bagels and toys, the marginal utility per dollar spent on bagels equals the marginal utility per dollar spent on toy cars.

(b) 1 point:

- One point is earned for stating that Theresa’s demand for bagels will not change because the increase in the price of wheat will affect the supply of bagels, not the demand.

(c) 1 point:

- One point is earned for stating that bagels are inferior goods.

(d) 1 point:

- One point is earned for calculating the cross-price elasticity for toy cars and blocks:  
 $-0.04/0.10 = -0.4$