



## **Student Performance Q&A:**

### **2004 AP<sup>®</sup> Microeconomics Free-Response Questions**

The following comments on the 2004 free-response questions for AP<sup>®</sup> Microeconomics were written by the Chief Reader, Clark G. Ross of Davidson College. They give an overview of each free-response question and of how students performed on the question, including typical student errors. General comments regarding the skills and content that students frequently have the most problems with are included. Some suggestions for improving student performance in these areas are also provided. Teachers are encouraged to attend a College Board workshop to learn strategies for improving student performance in specific areas.

#### **Question 1**

##### ***What was the intent of this question?***

This question tested both externalities and market structure. Students needed to distinguish between the social and private marginal cost, demonstrating a negative externality in this case. Moreover, students then needed to identify and explain the following quantities (or outputs): socially-optimum, unregulated monopoly, and unregulated perfect competition. Students were then asked to identify the appropriate policy to reach the social optimum from monopoly (a subsidy of \$3 per unit of output) and from unregulated perfect competition (a tax of \$5 per unit of output).

##### ***How well did students perform on this question?***

This was an excellent question. The mean score was 5.9 of a maximum 12 points or about 49.6% of maximum; the distribution of score points was excellent. From a design point of view, the question had the advantage of combining market structure and externalities. To achieve a strong score, a student really had to have a thorough grasp of microeconomics. Moreover, the question forced the student to reflect on a graph that he/she had likely never seen before, truly testing the student's understanding of the concepts included in the question.

***What were common student errors or omissions?***

Too many students were not able to explain correctly the existence of a negative externality, omitting the comparison of the marginal social and marginal private cost curves. Students had difficulty recognizing the need to subsidize the monopolist. The most difficult points (statistically) related to the specific value of the subsidy and of the tax needed to reach the socially-optimum level of output.

***Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

Stress the concepts of profit-maximization in different market structures and of externalities. Students should not just memorize graphs; if that is all they do, they will be unprepared for subtle changes to the graphs, as was the case in this question.

**Question 2**

***What was the intent of this question?***

This was a common international trade question in which a standard product is produced both domestically and imported. In the case of a standard product, a single graph showing both domestic production and imports is appropriate. The question also had the advantage of testing whether students had a good understanding of the concepts of consumer and producer surplus, as well as of the net gain in surplus from international trade.

***How well did students perform on this question?***

Students performed quite well on this question. The mean score was 4.2 out of a possible eight points or approximately 53% of the maximum score. The particularly difficult points related to identifying the area of producer surplus (Part (d)) and the area of net gain in surplus (Part (e)).

***What were common student errors or omissions?***

Students frequently were unable to identify the areas of consumer and producer surplus. Very few were able to identify the net gain in total surplus from engaging in international trade.

***Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

Work on consumer, producer, and total surpluses.

**Question 3**

***What was the intent of this question?***

This question was aimed at testing students' understanding of monopolistic competition and the role of fixed costs in short-run price-quantity determination.

***How well did students perform on this question?***

Students performed well on this question. The mean score was 3.7 out of a possible eight points or approximately 46.1% of the maximum.

***What were common student errors or omissions?***

In many cases, students were unable to draw a graph that showed a profit-maximizing, monopolistically competitive firm that was earning zero economic profit. Also, students frequently missed the point in Part (b) that a change in fixed costs will not affect marginal revenue or marginal cost, thus leaving price and output unchanged.

***Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

Work closely on the issue of price and quantity determination in the short-run. The marginal revenue and marginal cost equality is a basic principle of profit-maximization that applies with all market structures. Students should know well which changing factors affect marginal revenue and/or marginal cost. For instance, they should understand that a change in variable costs affects marginal cost, while a change in fixed cost will not affect the short-run marginal cost.