



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

### **2007 AP<sup>®</sup> Microeconomics Free-Response Questions**

The following comments on the 2007 free-response questions for AP<sup>®</sup> Microeconomics were written by the Chief Reader, Arthur Raymond of Muhlenberg College in Allentown, Pennsylvania. 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 assessed students' ability to recognize and graph a monopoly and to determine the effect of various changes on the output, price, and profits of the monopolist. Part (a) asked students to graph a monopoly that is earning positive economic profits. Parts (b) and (c) required them to determine the effects of, respectively, a lump-sum tax and a per-unit subsidy. In part (d) students had to explain the effect of patent expiration on economic profits.

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

Students performed well, scoring an average of 6.51, approximately 54 percent of the maximum 12 points. The best scores were achieved in part (d), which asked about the effects of patent expiration on economic profits. The lowest scores were on part (b), which required students to determine the effects of a lump-sum tax.

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

The most common error was the inability to determine the effect of a lump-sum tax on the monopolist's price, output, and profits.

***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?***

Students should understand that price and quantity changes for a firm originate from changes in marginal cost and/or marginal revenue. An alteration in fixed cost, like a lump-sum tax, has no effect on marginal cost and so does not modify price and quantity. A change in variable cost, like a per-unit subsidy, affects marginal cost and so does change price and quantity.

## **Question 2**

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

The intent of the question was to evaluate students' understanding of profit-maximizing labor usage by a firm.

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

The mean score was 1.97 points, which was about 33 percent of the total possible 6 points.

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

The most common error was the inability to recognize that for a firm hiring labor in a competitive market, the supply curve for labor is horizontal.

***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?***

Students should be aware of the relationship between the labor market and the firm. Although the supply curve for labor in the market slopes upward, the individual firm's labor supply curve is horizontal.

## **Question 3**

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

The purpose of the question was to determine students' understanding of basic game-theory concepts.

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

Students performed very well, scoring an average of 3.56 points, which is almost 60 percent of the 6 points that could be earned. This is quite good in and of itself, but especially so because it is the first time a game-theory question appeared in the free-response section of the exam.

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

The most common error occurred in part (d), where students were asked to determine whether a dominant strategy existed for one of the two firms.

***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?***

Students should understand the meaning of a dominant strategy and be presented with many payoff matrix examples and asked to determine the existence or nonexistence of dominant strategies for the two players.