



## **Student Performance Q&A: 2011 AP<sup>®</sup> Microeconomics Free-Response Questions**

The following comments on the 2011 free-response questions for AP<sup>®</sup> Microeconomics were written by the Chief Reader, David A. Anderson of Centre 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 determined students' ability to work with the standard monopoly model. It tested for an understanding of how monopolists establish price and quantity, how profit is identified, and how economic profit differs from accounting profit. It established whether students knew a condition for allocative efficiency and a condition for inelastic demand. It also determined whether students understood the workings of price ceilings and price discrimination.

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

The mean score was 4.17 out of a possible 10 points. Students performed especially well on part (a), on price determination; part (e)(ii), on accounting profit; and part (f)(ii), on the quantity with a price ceiling.

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

The hardest part of this question was part (f)(i), asking for the marginal revenue with the price ceiling. Other common stumbling blocks for students were part (d), asking about demand elasticity, and part (g)(ii), asking about consumer surplus under perfect price discrimination.

#### ***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?***

One of the most instructive benefits of learning economic models is the ability to apply them in the context of policy options (such as price ceilings) and special situations (such as price discrimination). After students understand the basic models, they use them to anticipate the effects of situations. Such applications will help students see why the models — and the students'

investments of time and effort in studying them — are important. This makes it worthwhile to dive into these often overlooked areas with which the students had difficulty.

## Question 2

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

This question tested students' ability to draw and work with models of perfectly competitive product and factor markets. Part (a) asked students to draw the graph for a representative firm in a competitive product market. Part (b) tested for an understanding of how changes in factor prices affect marginal cost. Part (c) asked students to draw and manipulate the graph of labor demand and supply for a representative firm.

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

The mean score was 2.87 out of a possible 6 points. Students performed well on part (a), which had them drawing the graph for a firm, and on the last element of part (c), showing the effect of the wage increase on marginal factor cost and the quantity of labor hired.

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

The hardest part of this question was the first element of part (c), for which students were to draw the marginal revenue product curve and the (horizontal) marginal factor cost curve for a firm in a perfectly competitive labor market.

### ***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?***

Most types of supply/marginal cost and demand/marginal benefit curves have the traditional shapes — upward sloping for supply and downward sloping for demand. The trick is to master the few exceptions, most notably the horizontal product demand curve for a firm in a perfectly competitive product market and — the one that tripped some students up here — the horizontal marginal factor cost curve of a firm in a perfectly competitive factor market. These are worthy of special attention, as are the vertical supply curves for money and aggregate supply.

## Question 3

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

This question tested for proficiency with the concepts of allocative efficiency and deadweight loss in a product market with negative externalities. It also determined whether students could reason that lump-sum taxes do not affect marginal cost or marginal revenue — the determinants of the profit-maximizing quantity.

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

The mean score was 1.11 out of a possible 5 points. Students performed relatively well on the first three elements of part (a), covering marginal private cost and marginal social cost, the market quantity, and the allocatively efficient quantity.

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

Students had difficulty with part (a)(iv), on deadweight loss, and part (b), on a lump-sum tax. Many students did not know how to illustrate the deadweight loss for a negative externality, and many did not seem to differentiate between a lump-sum tax and a per-unit tax.

***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?***

Deadweight losses can be tricky in some contexts, but they are important because they represent the inefficiency of many types of policies and market failures. Spend part of a class period giving students a variety of scenarios that would create deadweight loss, having them work in small groups to illustrate the resulting deadweight loss, and then reviewing the correct graphs as a class. Lump-sum taxes are a good thing to include in the standard lecture on tax types. They are especially worthy of attention because they are a way to collect revenue without causing deadweight loss. The downside is that they are regressive, so remedies for that problem can be a further topic of discussion and debate.