



AP[®] Microeconomics 2003 Free-Response Questions

The materials included in these files are intended for use by AP teachers for course and exam preparation; permission for any other use must be sought from the Advanced Placement Program[®]. Teachers may reproduce them, in whole or in part, in limited quantities for noncommercial, face-to-face teaching purposes. This permission does not apply to any third-party copyrights contained herein. This material may not be mass distributed, electronically or otherwise. These materials and any copies made of them may not be resold, and the copyright notices must be retained as they appear here.

These materials were produced by Educational Testing Service[®] (ETS[®]), which develops and administers the examinations of the Advanced Placement Program for the College Board. The College Board and Educational Testing Service (ETS) are dedicated to the principle of equal opportunity, and their programs, services, and employment policies are guided by that principle.

The College Board is a national nonprofit membership association whose mission is to prepare, inspire, and connect students to college and opportunity. Founded in 1900, the association is composed of more than 4,300 schools, colleges, universities, and other educational organizations. Each year, the College Board serves over three million students and their parents, 22,000 high schools, and 3,500 colleges through major programs and services in college admissions, guidance, assessment, financial aid, enrollment, and teaching and learning. Among its best-known programs are the SAT[®], the PSAT/NMSQT[®], and the Advanced Placement Program[®] (AP[®]). The College Board is committed to the principles of equity and excellence, and that commitment is embodied in all of its programs, services, activities, and concerns.

For further information, visit www.collegeboard.com

Copyright © 2003 College Entrance Examination Board. All rights reserved. College Board, Advanced Placement Program, AP, AP Vertical Teams, APCD, Pacesetter, Pre-AP, SAT, Student Search Service, and the acorn logo are registered trademarks of the College Entrance Examination Board.

AP Central is a trademark owned by the College Entrance Examination Board. PSAT/NMSQT is a registered trademark jointly owned by the College Entrance Examination Board and the National Merit Scholarship Corporation. Educational Testing Service and ETS are registered trademarks of Educational Testing Service. Other products and services may be trademarks of their respective owners.

For the College Board's online home for AP professionals, visit AP Central at apcentral.collegeboard.com.

2003 AP[®] MICROECONOMICS FREE-RESPONSE QUESTIONS

MICROECONOMICS

Section II

Planning time—10 minutes

Writing time—50 minutes

Directions: You have fifty 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.

1. J & P Company operates in a perfectly competitive market for smoke alarms. J & P is currently earning short-run positive economic profits.
 - (a) Using correctly labeled side-by-side graphs for the smoke alarm market and J & P Company, indicate each of the following for both the market and the J & P Company.
 - (i) Price
 - (ii) Output
 - (b) In the graph in part (a) for J & P, indicate the area of economic profits that J & P Company is earning in the short run.
 - (c) Using a new set of correctly labeled side-by-side graphs for the smoke alarm market and J & P Company, show what will happen in the long run to each of the following.
 - (i) Long-run equilibrium price and quantity in the market
 - (ii) Long-run equilibrium price and quantity for J & P Company
 - (d) Assume that purchases of smoke alarms create positive externalities. Draw a correctly labeled graph of the smoke alarm market.
 - (i) Label the market equilibrium quantity as Q_m .
 - (ii) Label the socially optimum equilibrium quantity as Q_s .
 - (e) Identify one government policy that could be implemented to encourage the industry to produce the socially optimum level of smoke alarms.

2003 AP[®] MICROECONOMICS FREE-RESPONSE QUESTIONS

2. (a) Draw a correctly labeled graph showing a typical monopoly that is maximizing profit and indicate each of the following.
- (i) Price
 - (ii) Quantity of output
 - (iii) Profit
- (b) Describe and explain the relationship between the monopolist's demand curve and marginal revenue curve.
- (c) Label each of the following on your graph in part (a).
- (i) Consumer surplus
 - (ii) Deadweight loss
-
3. Assume that Company XYZ is a profit-maximizing firm that hires its labor in a perfectly competitive labor market and sells its product in a perfectly competitive output market.
- (a) Define the marginal revenue product of labor (MRP_L).
- (b) Using correctly labeled side-by-side graphs, show each of the following.
- (i) The equilibrium wage in the labor market
 - (ii) The labor supply curve the firm faces
 - (iii) The number of workers the firm will hire
- (c) Company XYZ develops a new technology that increases its labor productivity. Currently this technology is not available to any other firm. For Company XYZ, explain how the increased productivity will affect each of the following.
- (i) Wage rates
 - (ii) Number of workers hired

END OF EXAMINATION