AP® Microeconomics
2002 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. <u>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</u>. 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. Claire invented product X and obtained a patent to prevent other firms from producing X. She is currently producing product X and earning positive economic profits.

    (a) Using a correctly labeled graph, show each of the following for Claire if she maximizes profits.

        (i)   Output

        (ii) Price

        (iii) Economic profits

    (b) Assume that Claire hires labor in a perfectly competitive labor market. Using correctly labeled side-by-side graphs for the labor market and for Claire, show each of the following.

        (i)   The wage rate of the workers

        (ii) The number of workers Claire will hire

    (c) Assume now the patent expires and many firms produce the identical product that Claire produces. Using correctly labeled side-by-side graphs for the industry and the firm, show each of the following in long-run equilibrium.

        (i)   Industry price and output

        (ii) The typical firm's price and output

2. The graph below shows the price (P_0) and quantity (Q_0) at which there is an efficient allocation of resources.
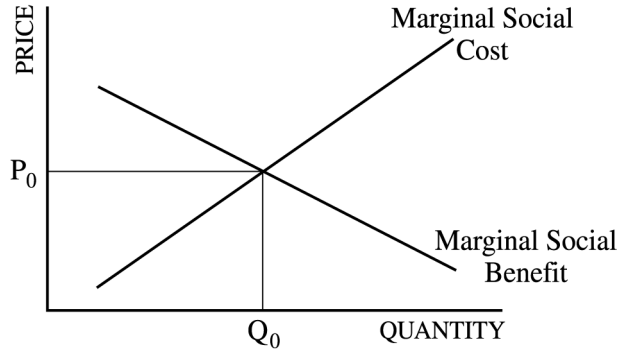
However, in some cases the market fails to allocate resources efficiently.

(a) Assume the chemical industry is polluting the air.

    (i) Using marginal benefit and marginal cost analysis, explain how the chemical industry is misallocating resources.

    (ii) Identify one policy or action the government could take to correct this market failure.

(b) Assume it is difficult to exclude nonpayers from enjoying the benefits of national defense.

    (i) Using marginal benefit and marginal cost analysis, explain how the private market will fail to produce the efficient level of national defense.

    (ii) Identify one policy or action the government could take to correct this market failure.

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