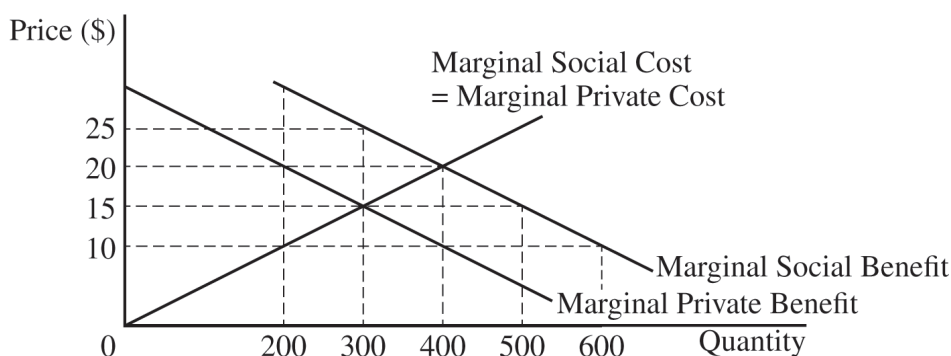


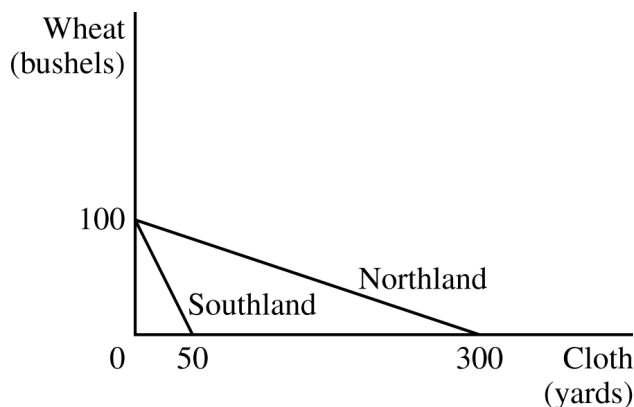
2. Good X is produced and sold in a perfectly competitive market. The provided graph shows the market for Good X.



- (a) Identify the market equilibrium price and quantity.
- (b) Calculate the deadweight loss at the market equilibrium. Show your work.
- (c) Suppose the government wants to eliminate the deadweight loss in the market for Good X.
- Which of the following will achieve the government's objective: a per-unit tax on consumers or a per-unit subsidy to consumers? Explain.
 - What is the dollar value of the per-unit tax or per-unit subsidy identified in part (c)(i) ?
- (d) Suppose instead the government imposes a price ceiling of \$10. Will the price ceiling achieve the socially optimal quantity of Good X? Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. The graph shows the production possibilities curves for Northland and Southland.



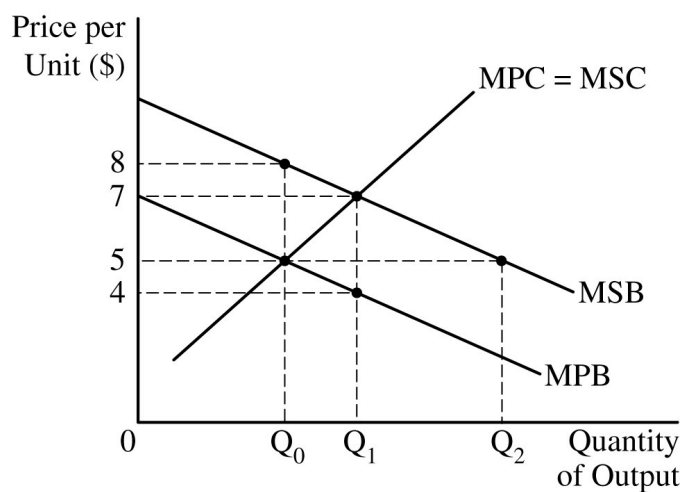
- (a) Which country has a comparative advantage in producing wheat? Explain using numbers.
- (b) Identify a specific number of yards of cloth that could be traded for 10 bushels of wheat and would be mutually beneficial to Northland and Southland.
- (c) Southland's maximum possible output of wheat falls from 100 bushels to 75 bushels. Assuming no other changes, will Southland have a comparative advantage in producing cloth? Explain using numbers.
- (d) Turnips are produced in a perfectly competitive market in Alderia, a third country, which does not engage in international trade. Runoff from turnip fields pollutes Alderia's rivers, hurting its residents.
- Does the turnip market equilibrium result in an efficient allocation of resources? Explain using marginal analysis.
 - In an effort to reduce pollution, Alderia's government imposes a lump-sum tax on turnip production. What will be the impact on the turnip market equilibrium price and quantity in the short run?

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

1. Anderson Company is a typical firm that manufactures Good G in a constant-cost, perfectly competitive market. Anderson Company is currently earning positive economic profit.
- (a) What must be true about the relationship between accounting profit and economic profit if Anderson Company currently incurs both explicit and implicit costs in production?
- (b) Draw correctly labeled side-by-side graphs for the market and Anderson Company and show each of the following.
- (i) The market equilibrium price and quantity, labeled P_M and Q_M , respectively
 - (ii) The profit-maximizing price and quantity for Anderson Company, labeled P_F and Q_F , respectively
 - (iii) The area representing Anderson Company's positive economic profit, shaded completely
- (c) On your graphs in part (b), show what will happen to each of the following if the market for Good G adjusts to long-run equilibrium.
- (i) The market equilibrium price and quantity, labeled P_2 and Q_2 , respectively
 - (ii) Anderson Company's profit-maximizing price and quantity, labeled P^* and Q^* , respectively
- (d) Assume the production of Good G creates benefits for third parties.
- (i) Given this situation, will the market equilibrium quantity be greater than, less than, or equal to the allocatively efficient quantity? Explain.
 - (ii) The government takes an action that corrects the externality in the market for Good G. As a result of the government's action, does total economic surplus increase, decrease, or stay the same? Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. Bueno is a firm that produces and sells guava, a type of fruit. The market for guava is perfectly competitive. The marginal private benefit (MPB), marginal private cost (MPC), marginal social benefit (MSB), and marginal social cost (MSC) curves are illustrated in the graph provided.



- (a) Identify the kind of market failure represented by this graph.
- (b) Using numbers from the graph, identify the marginal external benefit.
- (c) Assume the guava market is in short-run equilibrium and Bueno hires workers in a perfectly competitive labor market at a wage of \$20 per hour. The marginal product of the last worker hired was 6 units of guava per hour.
- Calculate the change in Bueno's profit per hour from the last worker hired. Show your work.
 - Suppose that the government decides to provide a per-unit subsidy to consumers who buy guava. How would the per-unit subsidy affect Bueno's marginal revenue product curve? Explain.
- (d) Instead of hiring workers in a perfectly competitive labor market, assume Bueno hires workers in a monopsony labor market. Will the number of workers hired increase, decrease, or stay the same? Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

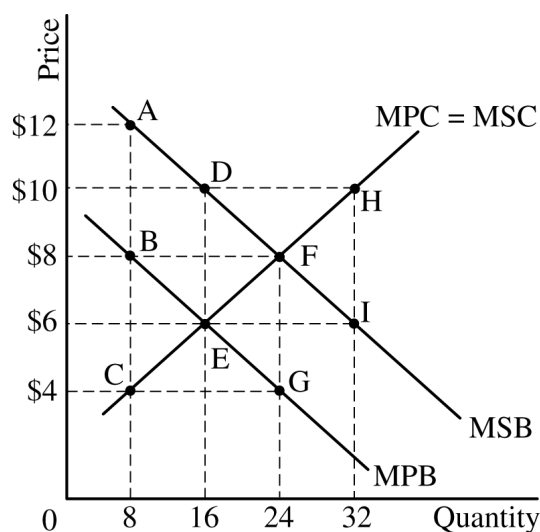
1. Sugar is produced in a perfectly competitive market using inputs from perfectly competitive factor markets. Frank Sugar Co. is a representative firm in the sugar market.
- (a) Assume Frank Sugar Co. is earning zero economic profit. Draw correctly labeled side-by-side graphs for the sugar market and Frank Sugar Co. and show each of the following.
- (i) The market equilibrium price and quantity, labeled P_M and Q_M , respectively
 - (ii) The profit-maximizing price and quantity for Frank Sugar Co., labeled P_F and Q_F , respectively
- (b) Assume the demand for sugar increases and sugar is produced in a constant-cost industry.
- (i) On your graph in part (a), show the short-run effect of the increased demand for sugar on the market price, labeled P_2 , and the quantity sold by Frank Sugar Co., labeled Q_N .
 - (ii) Compared to the equilibrium identified in part (a)(ii), what will happen to the short-run profit earned by Frank Sugar Co. as a result of the increased demand for sugar?
 - (iii) When the market adjusts to long-run equilibrium, how will the market price of sugar in the long run compare to P_2 ? Explain.
- (c) Instead, assume sugar consumption has a negative impact on public health over time and the negative impact of sugar on health is underestimated by consumers. Draw a correctly labeled graph of the market, with the marginal social benefit (MSB), marginal private benefit (MPB), marginal social cost (MSC), and marginal private cost (MPC) curves, and show each of the following.
- (i) The market equilibrium quantity, labeled Q_M
 - (ii) The socially optimal quantity, labeled Q_S
- (d) Assume the government decides to intervene in the market to affect consumers' incentives and to address the negative impact of sugar consumption on public health. Which of the following policies would best achieve that objective in the short run: a lump-sum tax, a per-unit tax, a lump-sum subsidy, or a per-unit subsidy? Explain.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. Copper is produced in a perfectly competitive market with an upward-sloping supply curve and a downward-sloping demand curve. Assume the production of copper results in liquid waste, which seeps into local rivers. The contaminated river water causes human illnesses and crop failures downstream. The marginal external cost from producing copper is constant across all quantities of copper produced.
- (a) Draw a correctly labeled graph of the copper market with the marginal social benefit (MSB), marginal private benefit (MPB), marginal social cost (MSC), and marginal private cost (MPC) curves, and show each of the following.
- (i) The market equilibrium quantity, labeled Q_M
 - (ii) The socially efficient quantity, labeled Q_S
- (b) Suppose the demand for copper decreases. On your graph in part (a), show the deadweight loss at the new market equilibrium, shaded completely.
- (c) Suppose the government is considering levying a tax on copper.
- (i) What per-unit tax level would achieve the socially optimal quantity?
 - (ii) Explain why a lump-sum tax on producers will not achieve the socially optimal quantity in the short run.

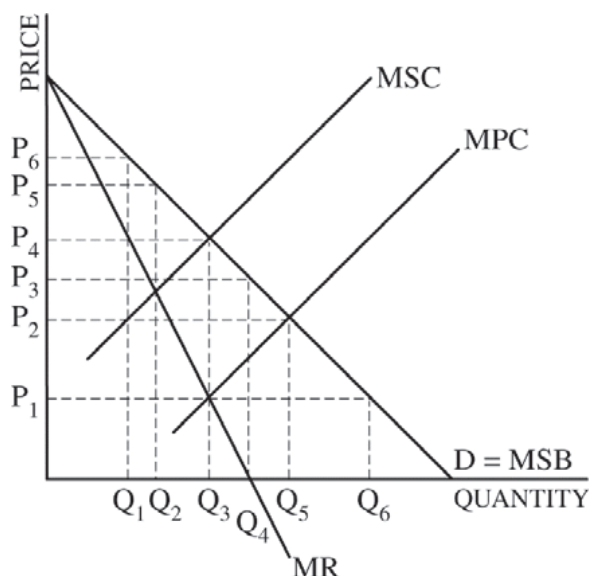
Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. Modern-day word processing software gives consumers the ability to create and save documents in different file formats that can then be accessed by multiple computer operating systems. The graph below depicts a perfectly competitive market for word processing software. In the graph, MSB is the marginal social benefit, MPB is the marginal private benefit, MPC is the marginal private cost, and MSC is the marginal social cost.



- Identify the type of market failure illustrated by the graph. Explain.
- Using the numbers on the graph, identify the market equilibrium price and quantity.
- Using the labeling on the graph, identify the area representing the deadweight loss at the quantity identified in part (b).
- Suppose the government is considering granting a subsidy to correct the market failure. What is the dollar value of the per-unit subsidy that would achieve the socially optimal quantity?
- Suppose the government does not grant the subsidy and instead imposes a price floor at \$8.
 - How many units will consumers and producers exchange at the price floor?
 - Does the price floor correct the market failure? Explain.

3. The graph below shows the marginal social cost (MSC), marginal private cost (MPC), marginal social benefit (MSB), demand (D), and marginal revenue (MR) curves for a monopoly.



- (a) Identify the monopolist's
- (i) profit-maximizing quantity
 - (ii) profit-maximizing price
- (b) What information in the graph indicates that there is a negative externality?
- (c) Identify the socially optimal quantity.
- (d) In the case in which the government imposes a per-unit tax equal to the marginal external cost, identify each of the following.
- (i) The dollar value of the tax, using the price labels from the graph
 - (ii) The profit-maximizing quantity associated with the tax
- (e) Given the monopoly facing the negative externality, would the deadweight loss increase, decrease, or stay the same as a result of imposing the per-unit tax? Explain.

STOP

END OF EXAM