

**Part I: Each is worth 2 points.**

1. Suppose a new vaccine for Lyme disease is developed by Merck, a large drug company. Which of the following is most likely to occur?
  - A) Merck will apply for a patent on the vaccine that grants it the monopoly rights to the vaccine for many years.
  - B) Merck will have a monopoly on this vaccine because of economies of scale.
  - C) Other firms will quickly copy the formula making the market for the vaccine perfectly competitive.
  - D) Merck will not tell anyone about this breakthrough.
  
2. Which of the following is a characteristic of a single-price monopoly?
  - A) The firm is a price taker.
  - B) Price exceeds marginal revenue.
  - C) There are many close substitutes for the firm's product.
  - D) Demand is perfectly elastic.
  
3. Which of the following statements is FALSE?
  - A) Monopolists can set their price while perfect competitors cannot.
  - B) Monopolists can earn an economic profit in the long run but perfect competitors cannot.
  - C) In the short run, monopolists may operate even though they are incurring an economic loss but in the short run perfect competitors always shut down if they are incurring an economic loss.
  - D) Monopolists are protected by barriers to entry while perfect competitors are not.

Rooms rented monthly	Price (dollars per room)	Total cost (dollars)
0	201	100
1	191	200
2	181	290
3	171	370
4	161	440
5	151	520
6	141	610
7	131	710
8	121	820
9	111	940
10	101	1090
11	91	1290

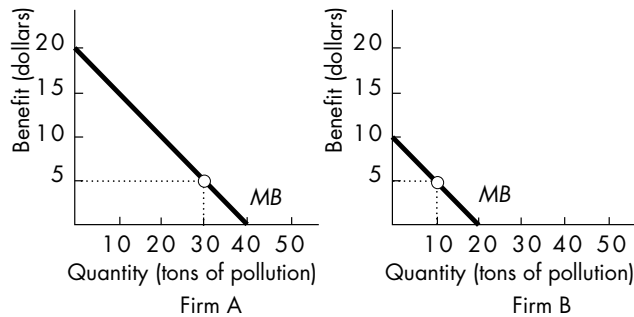
4. The table above shows the demand and total cost schedule for a monopolist hotel. What is the marginal revenue from renting out the fifth room each night?
  - A) \$141
  - B) \$151
  - C) \$161
  - D) \$111
  
5. The table above shows the demand and total cost schedule for a monopolist hotel. What price should the monopolist charge if it is a profit maximizer?
  - A) \$171
  - B) \$161
  - C) \$151
  - D) \$141

6. Relative to a perfectly competitive industry with the same cost and demand, a single-price monopolist produces
- more output and has a higher price.
  - less output and has a higher price.
  - more output and has a lower price.
  - less output and has a lower price.
7. Price discrimination is the practice of charging different prices to
- different customers even though cost of selling to each is the same.
  - different customers because the costs of selling are different.
  - the same customers because of changes in cost.
  - different countries because of tariffs and transportation costs.
8. It is easier for a monopolist to price discriminate between groups for a service than for a product because
- it is easier to calculate average willingness-to-pay for services.
  - it is easier for consumers to resell products than services.
  - it is easier to distinguish between groups of customers for services than customers for products.
  - customers for products usually do not differ with respect to their average willingness-to-pay.
9. Which of the following is true for a perfect price-discriminating monopoly?
- $P = MC$  for each unit sold
  - $P = ATC$  for each unit sold.
  - $P = MR$  for each unit sold.
  - $P > MC$  for each unit sold.
10. For a good to be nonrival, which of the following must be true?
- A person is willing to pay any price to ensure that the product is available.
  - A person cannot be prevented from consuming that good even if he or she did not pay for it.
  - One person's consumption of that good does not decrease another person's consumption of that good.
  - A person is not willing to pay for the good because even without paying for it, the person can consume the good anyway.

Quantity	Kathy Marginal benefit (dollars per submarine)	Quantity	Bobby Marginal benefit (dollars per submarine)
1	100	1	150
2	75	2	100
3	50	3	50
4	25	4	10
5	0	5	0

11. The above table shows the marginal benefit from submarines for the only two citizens of a country. Submarines are a public good. If submarines cost \$175 a piece to produce, what is the efficient quantity of submarines?
- 3
  - 2
  - 1
  - 0
12. The cause of externalities is that
- the marginal social benefit of an activity decreases as the activity is increased.
  - the marginal social cost of an activity increases as that activity is increased.
  - property rights are not established resulting in the inefficient use of a resource.
  - Both answers A and B are correct.

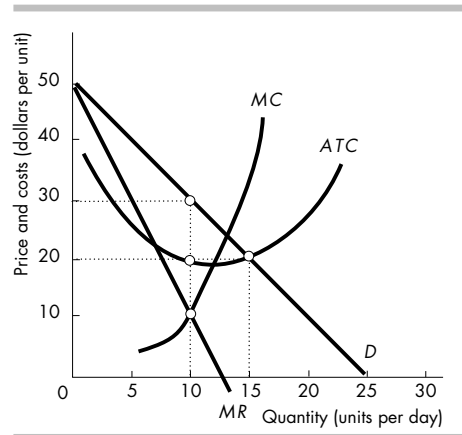
13. The Coase Theorem points out that externality problems can be eliminated if
- property rights are granted solely to consumers.
  - property rights are granted solely to producers.
  - property rights can be obtained from the government.
  - property rights exist and transactions costs are low.



14. The above figure shows the marginal benefits from pollution for two firms. If both firms receive a marketable permit to emit 20 tons of pollution each, which of the following is LEAST likely to occur?
- 40 tons of pollution will be generated.
  - Firm A will buy some pollution rights from firm B.
  - Firm B will buy some pollution rights from firm A.
  - Firm A will generate more than 20 tons of pollution.
15. When externalities are present
- competitive markets are efficient.
  - competitive markets are inefficient.
  - a tax is required to eliminate the inefficiency.
  - property rights have already been established.
16. A tax equal to the external marginal cost of an activity yields the efficient level of pollution because
- it achieves the competitive equilibrium.
  - it forces producers to face *all* costs of production including the external cost.
  - it ensures greater profits for the firm.
  - it eliminates all pollution.
17. A profit maximizing monopolist sets  $MR = MC$ . Because marginal costs are positive, the monopolist will set a price where its demand is
- unit elastic.
  - inelastic.
  - elastic.
  - perfectly elastic.

**Part II: You must answer each question in this part.**

18. The figure below shows the demand and cost curves for a single-price monopolist.
- What price and output will a profit-maximizing monopolist choose? [2 points]
  - How much profit will the firm earn at this output level? [2 points]
  - Suppose that the monopolist's property tax bill decreases by \$50. Should the monopolist change its price and output? Explain why or why not. [2 points]



19. A magnet manufacturing plant is located in the middle of Devola, a small residential community. The magnet company's production process creates considerable noise and dust on a regular basis. Needless to say, the noise and dust creates a nuisance for the 60 homeowners surrounding the plant. It is estimated that each homeowner suffers \$3000 worth of health and home damages due to the noise and dust pollution. The community members can avoid the damage created by the noise and dust by installing better insulation and windows at a cost of \$1500 per household. The magnet company can reduce its noise and dust emissions by installing a system of filters at a cost of \$120,000.
- If transactions costs are low and the magnet company is given the right to make noise, what outcome do you predict and why? [3 points]
  - If transactions costs are low and the local community is given the right to a noise- and dust-free environment, what outcome do you predict and why? [3 points]
  - Suppose that transactions costs are so high that private bargaining is impossible. If the magnet company is required by law to compensate the homeowners for the damage due to the noise and dust pollution, then what outcome do you predict and why? [3 points]

**Part III: Answer any TWO questions. Each is worth 5 points.**

20. Why do perfectly competitive firms maximize their profits by producing so that the price is equal to marginal cost, but monopolists maximize their profits by setting a price that is greater than marginal cost?
21. Why would the amount of immunization provided be inefficient if subsidies to immunization were not provided? Use a graph of the market for immunization to illustrate your argument.
22. Why does the free market have difficulty providing "public goods"? What two characteristics define a public good? Explain each.