Economics 101
Professor Wallace
December 19, 2003

Final Exam

Instructions

Do not open the exam until you are instructed to begin. You will need a #2 lead pencil. If you do not have one you will need to borrow one from Professor Wallace or one of the TAs. Before you may begin the exam everyone must take the following steps.
   a) Use the #2 lead pencil to fill in your name on the answer sheet.
   b) Fill in your student ID number on the answer sheet.
   c) Fill in your exam version (printed on the upper right corner) in column B of the space allotted for "Special Codes" on the answer sheet.
   d) Fill in your TA code in column A of the space allotted for ``Special Codes" on the answer sheet.
      1. If your TA is Sudip Gupta then your TA code is 1.
      2. If your TA is Jiman Im then your TA code is 2.
      3. If your TA is Yutaka Kagami then your TA code is 3.
      4. If your TA is Jiyoung Kim then your TA code is 4.
      5. If your TA is Matthew Lindsey then your TA code is 5.

1. The marginal revenue product equals
   a. total revenue divided by total product (output).
   b. marginal revenue divided by marginal product.
   c. total revenue multiplied by total product (output).
   d. marginal revenue multiplied by marginal product.

Quantity of labor (workers)	Total revenue (dollars)	Total product (units of output)
0	0	0
1	20	5
2	36	9
3	48	12
4	56	14
5	60	15

2. In the table above, if the wage rate is $8.00 per hour, the profit-maximizing number of workers is
   a. 1.
   b. 2.
   c. 4.
   d. 5.

3. A firm in a competitive labor market will hire labor until the marginal revenue product of labor equals
   a. the firm's marginal revenue.
   b. the firm's marginal cost.
   c. the firm's average cost.
   d. the wage rate.

4. The present value of $100 to be received in the year 2008 is
   a. less than the present value of $100 to be received in 2009.
   b. greater than the present value of $100 to be received in 2009.
   c. the same as the present value of $100 to be received in 2009.
   d. greater than the present value of $100 to be received in 2009 if the interest rate in 2009 exceeds that in 2008; otherwise, it is zero.

5. A fall in the interest rate
    a. shifts a firm's demand curve for capital leftward.
    b. shifts a firm's demand curve for capital rightward.
    c. results in a movement to the right and downward along a firm's demand curve for capital.
    d. results in a movement to the left and upward along a firm's demand curve for capital.

6. A monopoly is best defined as
    a. an industry with only one firm and in which the good produced has no close substitutes.
    b. a firm that purchases its resources from only one supplier.
    c. an industry that sells all its output to one buyer.
    d. a firm that sells all its output to one buyer.

Use the following information to solve the next 4 questions about a monopolistic market.

The demand for a good is given by:

   P = 10 – Q.

**A monopolist's costs are given by:**

   TC = 2 + 4Q.

7. Suppose a single price monopolist controls the market for this good. The monopolist's optimal price and quantity choice is:
   a. PM = $7, QM = 3.
   b. PM = $6, QM = 4
   c. PM = $5, QM = 5.
   d. PM = $4, QM = 6.

8. Using your answer from the previous question, the single price monopolist's profit is:
   a. $3.
   b. $7.
   c. $10.
   d. $13.
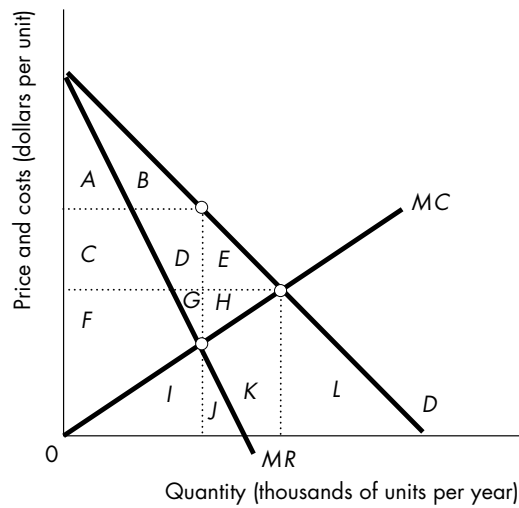
9. The deadweight loss from the monopoly is:
   a. $6.
   b. $4.5
   c. $8.
   d. $12.

10. Now suppose that the market for this good is controlled by a perfectly price discriminating monopolist. What are the perfectly price discriminating monopolist's profits?
   a. $14.
   b. $16.
   c. $18.
   d. $20

11. A major difference between a single-price monopolist and a perfectly competitive firm is that
    a. the monopolist can maximize profit by setting the price of the output with marginal cost.
    b. the monopolist can always increase its profits by increasing the price of its output.
    c. the monopolist's marginal revenue is less than price.
    d. the monopolist is guaranteed to earn an economic profit.

12. If a monopolist lowers its price and its demand is inelastic, then its
    a. total revenue increases.
    b. total revenue decreases.
    c. total revenue does not change.
    d. total revenue is negative.

13. Which of the following is true for BOTH monopoly and perfect competition?
    a. The demand for the individual firm's product is perfectly elastic.
    b. Economic profits can be sustained indefinitely over time.
    c. Marginal revenue is horizontal at the industry equilibrium price.
    d. Profits are maximized by producing at the level of output where marginal revenue is equal to marginal cost.
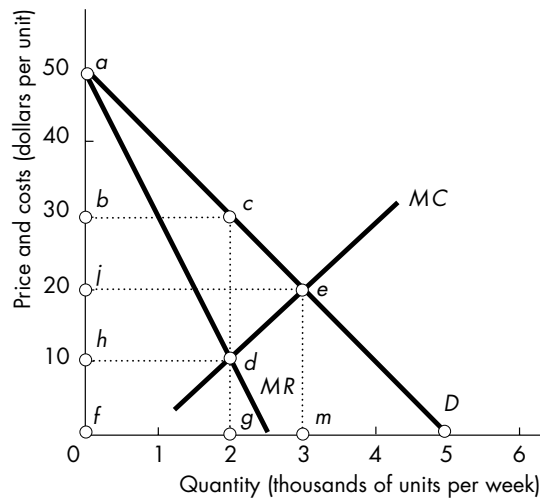
14. In the above figure, a single-price monopolist charges a price of ____ , resulting in total revenue equal to area _____.
    a. $10; *hbcd.*
    b. $20; *fjem.*
    c. $10; *fbcg.*
    d. $30; *fbcg.*

15. In the above figure, if the single-price monopolist charges a price that maximizes its profits, consumer surplus is
    a. area *hacd.*
    b. area *bac.*
    c. area *jae.*
    d. area *jbce.*

Price and costs (dollars per unit)

Quantity (thousands of units per year)

16. Which area(s) in the above figure indicates producer surplus at the price and quantity that would be set by a single-price monopoly?
    a. C + D
    b. C + D + E
    c. C + D + F + G
    d. C + D + F + G + I

17. In the above figure, if the market was a single-price monopoly rather than perfectly competitive, which area shows the transfer of surplus from consumers to producers as a result of the monopoly?
    a. A + B
    b. C + D
    c. C + D + E
    d. E + H

18. Price discrimination by a monopolist is less effective if
    a. the good can be resold.
    b. the good has no substitutes.
    c. the monopolist can identify buyers by willingness to pay.
    d. the good cannot be resold.
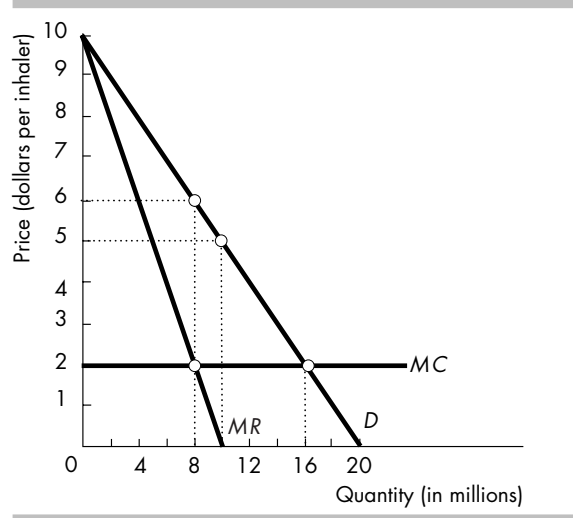
19. Prime Pharmaceuticals has developed a new asthma medicine, for which they have a patent. An inhaler can be produced at a constant marginal cost of $2/inhaler. The demand curve, marginal revenue curve, and marginal cost curve for this new asthma inhaler are in the figure above. If Prime Pharmaceuticals could practice perfect price discrimination, then which of the following is true?
    a. It would produce and sell 16 million inhalers.
    b. Inhalers would sell for $5 each.
    c. Inhalers would sell for $2 each.
    d. None of the above answers are correct.

20. Prime Pharmaceuticals has developed a new asthma medicine, for which they have a patent. An inhaler can be produced at a constant marginal cost of $2/inhaler. The demand curve, marginal revenue curve, and marginal cost curve for this new asthma inhaler are in the figure above. If Prime Pharmaceuticals could practice perfect price discrimination, then consumer surplus would equal
    a. $64 million.
    b. $16 million.
    c. $32 million.
    d. Zero.

21. All of the following characteristics apply to monopolistic competition EXCEPT
    a. a large number of firms compete.
    b. each firm produces the same identical product.
    c. firms compete on product quality, price, and marketing.
   d. there are no barriers to enter or exit the industry.

22. Within a monopolistically competitive industry,
    a. each firm faces a downward sloping demand curve.
    b. firms can charge a higher price for a higher quality product.
    c. firms are not able to collude because there are too many of them.
    d. All of the above answers are correct.

23. When comparing perfect competition and monopolistic competition, we find that
    a. firms in monopolistic competition produce identical products just as do firms in perfect competition
    b. firms in monopolistic competition face barriers to entry, unlike firms in perfect competition.
    c. advertising plays a large role in monopolistic competition, unlike in perfect competition.
    d. firms in monopolistic competition are price takers just as is the case for firms in perfect competition.

24. Of the following market structures, which has the fewest number of firms competing against each other?
    a. Monopolistic competition.
    b. Oligopoly.
    c. Perfect competition.
    d. Both answers A and C are correct.

		Firm 2	
		Sell	Give away
Firm 1	Sell	$3,3	$4,-1
	Give away	–$1, $4	$2,$2

25. Two software firms have developed an identical new software application. They are debating whether to sell the application at $30 a copy or give the new application away free and then sell add-ons. The payoff matrix is above and the payoffs are profits in millions of dollars. What is the Nash equilibrium of the game?
    a. Both Firm 1 and 2 will sell the software application at $30 a copy.
    b. Both Firm 1 and 2 will give the software application away free.
    c. Firm 1 will give the application away free and Firm 2 will sell it at $30.
    d. There is no Nash equilibrium to this game.

| | | American | |
		Cheat	Comply
Nationa l	Cheat	$0,$0	$40000, – $2,000
	Compl y	-$2000, $4,000	$3,000, $3,000

26. There are two can companies, American and National, which have entered into a collusive agreement. The payoff matrix of economic profits is above. If both firms cheat on the collusive agreement, what amount of economic profit is earned by American?
    a. $0
    b. $3,000
    c. $4,000
    d. –$2,000

27. A public good is
    a. nonexcludable and nonrival.
    b. nonexcludable and rival.
    c. excludable and nonrival.
   d. excludable and rival.
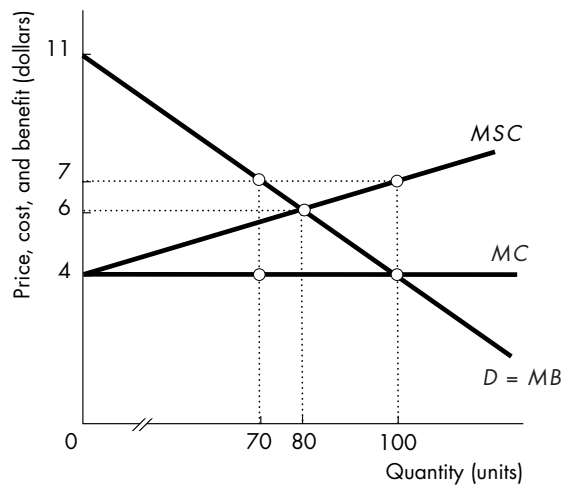
28. In the above figure, if MSC is marginal social cost and MC is marginal private cost, then in order to achieve efficiency, a tax of _____ per unit needed.
    a. $3
    b. $6
    c. $0
    d. $2

29. In a monopolistic competitive market there are
    a. Many firms
    b. One Firm
    c. A very small number of firms
    d. Two firms

30. If a consumer's budget line for food (F) and shelter (S) is represented as F=250-5S, we know that
    a. the consumer's income is 250.
    b. the price of shelter is 5.
    c. the price of shelter is 5 times the price of food.
    d. all of the above.

31. If Fred's marginal utility of pizza equals 10 and his marginal utility of salad equals 2, then
    a. he would give up 5 pizzas to get the next salad
    b. he would give up 5 salads to get the next pizza
    c. he will eat five times as much pizza as salad
    d. he will eat five times as much salad as pizza.

32. Lisa maximizes her utility by eating both pizza and burritos. The price of pizza is
    $10 and the price of burrito is $5. When Lisa's utility is miximized
    a. the marginal utility of pizza is larger than the marginal utility of burritos
    b. the marginal utility of a burrito is larger than the marginal utility of a pizza
    c. the marginal utility of both goods is the same.
    d. the good with the larger marginal utility cannot be determined without
       more information.

33. If a good is an inferior good, then its
    a. demand curve will be upward sloping
    b. income effect reinforces the substitution effect
    c. income elasticity is negative
    d. all of the above.

34. The average product of labor will fall as long as
    a. marginal productivity is falling
    b. it exceed marginal productivity
    c. it is less than marginal productivity
    d. the number of workers is increasing.

35. Suppose the total cost of producing T-shirts can be represented as TC=50+2Q.
    The marginal cost of the 5th T-shirt is
    a. 2
    b. 12
    c. 52
    d. 60

36. The perfectly competitive firm's supply curve is equal to
    a. its marginal cost curve.
    b. The portion of its marginal cost curve that lies above average cost.
    c. The portion of its marginal cost curve that lies above average variable
       cost.
    d. The portion of its marginal cost curve that lies above average fixed cost.

37. If a competitive firm cannot earn profit at any level of output during a given
    short-run period, then which of the following is **LEAST** likely to occur
    a. It will shut down in the short run and wait until the price increases
       sufficiently
    b. It will exit the industry in the long run
    c. It will operate at a loss in the short run
    d. It will minimize its loss by decreasing output so that price exceeds
       marginal cost.

38. Mary purchased a stuffed animal toy for $5. After a few weeks, someone offered her $100 for the toy. Mary refused. One can conclude that Mary's consumer's surplus from the toy is
    a. less than $5
    b. at least $95
    c. at least $100
    d. $105

39. In the short run, if a firm operates, it earns a profit of $500. The fixed costs of the firm are $100. This firm has a producer surplus of
    a. $500
   b. $100
    c. $400
    d. $600
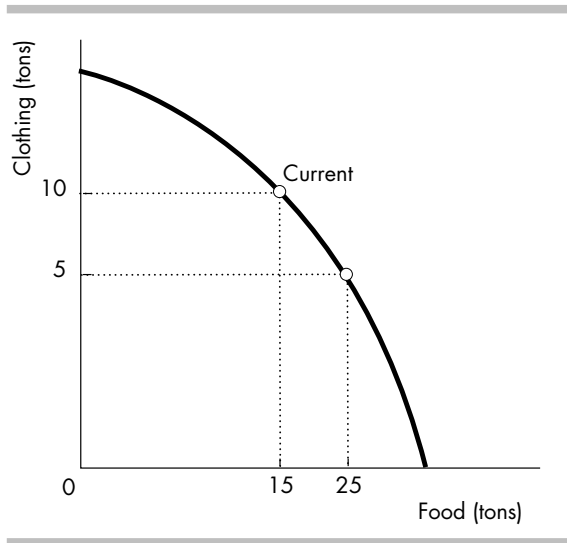
40. The above figure illustrates that if this country wishes to move from its current production point (labeled "Current") and have 10 more tons of food, it can do this by producing
    a. 10 more tons of clothing.
    b. 10 fewer tons of clothing.
    c. 5 more tons of clothing.
    d. 5 fewer tons of clothing.

41. Opportunity cost is represented on the production possibilities frontier by
    a. attainable and unattainable points.
    b. efficient and inefficient points.
    c. the amount of good Y forgone when more of good X is produced.
    d. technological progress.

VCRs (millions per year)

Telephones (millions per year)
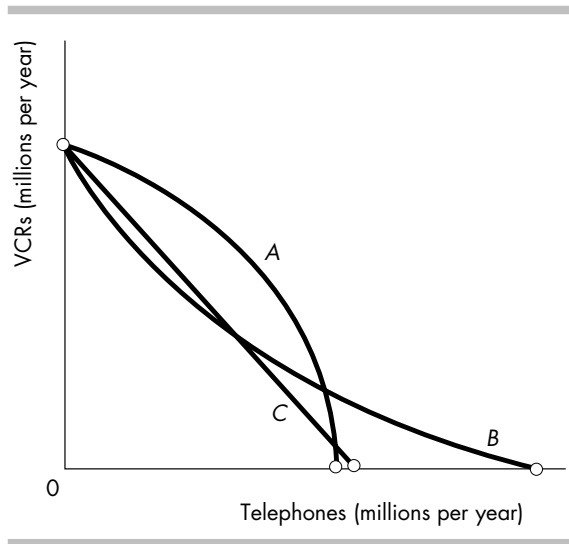
42. In the figure above, which of the curves shows a production possibilities frontier with increasing opportunity cost in the production of VCRs and telephones?
   a. A
   b. B
   c. C
   d. All of the curves illustrate a production possibilities frontier with increasing opportunity cost in the production of VCRs and telephones.

43. Marginal cost is
   a. the cost of producing the first unit of a good or service.
   b. the total cost, less the production of the other good or service.
   c. greater than the opportunity cost.
   d. equal to the opportunity cost of producing one more unit of a good or service.

44. The opportunity cost of producing one ton of wheat for Country Gamma is 4 tons of corn. The opportunity cost of producing one ton of wheat for Country Beta is 8 tons of corn. Which country has the comparative advantage in the production of wheat?
   a. Gamma
   b. Beta
   c. Neither country has a comparative advantage
   d. Both countries have the comparative advantage.

45. Missouri can produce 10,000 tons of pecans per year or 5,000 tons of pears per year. Washington can produce 12,000 tons of pecans per year or 48,000 tons of pears per year. If these two states were to engage in trade, which of the following is true?
    a. Missouri would specialize in pear production and trade pears to Washington for pecans.
    b. Missouri would specialize in pecan production and trade pecans to Washington for pears.
    c. Washington would produce both pears and pecans and Missouri would produce neither.
    d. Half of both Washington's and Missouri's resources would be devoted to pears and the other half to pecans because that is the comparative advantage.

46. Suppose that the quantity of pizza sold decreased by 15 percent after an increase in price of 10 percent. What is the price elasticity of demand for pizza?
    a. 1.50.
    b. 0.67.
    c. –2.50.
    d. –0.67.

47. If the price elasticity of demand is between 0 and 1, the good is said to have
    a. perfectly elastic demand.
    b. perfectly inelastic demand.
    c. unit elastic demand.
    d. inelastic demand.

48. If the demand for a good is elastic, that means that when price increases
    a. the demand will decrease.
    b. the quantity demanded will increase.
    c. the quantity demanded will decrease by a smaller percentage than the price increased.
   d. the quantity demanded will decrease by a greater percentage than the price increased.
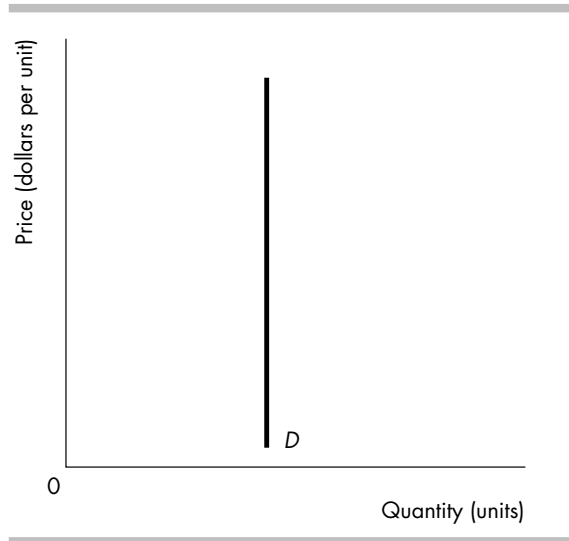
49. The good whose demand curve is illustrated in the above figure is said to have
    a. perfectly inelastic demand.
    b. perfectly elastic demand.
    c. unit elastic demand.
    d. elastic, inelastic and unit elastic demand.

50. If the demand curve for a good is a downward sloping straight line, the demand
    for the good will be more price elastic the higher is the
    a. price of the good.
    b. price of substitutes.
    c. income of consumers.
    d. income elasticity of demand for that good.

51. As an individual consumes more and more units of a good
    a. total and marginal utility both decrease.
    b. total utility decreases, but marginal utility increases.
    c. total utility increases, but marginal utility decreases.
    d. total and marginal utility both increase.

52. The marginal rate of substitution is
    a. the rate at which the consumer will give up one good to get an additional
       unit of another good while remaining on the same indifference curve.
    b. the rate at which utility increases as the consumer increases purchases of a
       good, holding purchases of the other good constant.
    c. the rate at which a consumer will exchange a good for income holding
       prices constant.
   d. None of the above answers is correct.

53. The substitution effect from the increase in the price of a good
    a. leads to a movement along the fixed budget line, due to a change in relative prices.
    b. increases the quantity demanded of the good.
    c. decreases the quantity demanded of the good.
    d. Both answers A and B are correct.

54. Keeping in mind the indifference curve/income-time budget line approach, as a worker's wage increases, the worker may decide to
    a. work more hours.
    b. work less hours.
    c. not to alter the numbers of hours worked.
    d. All of the above outcomes are possible.
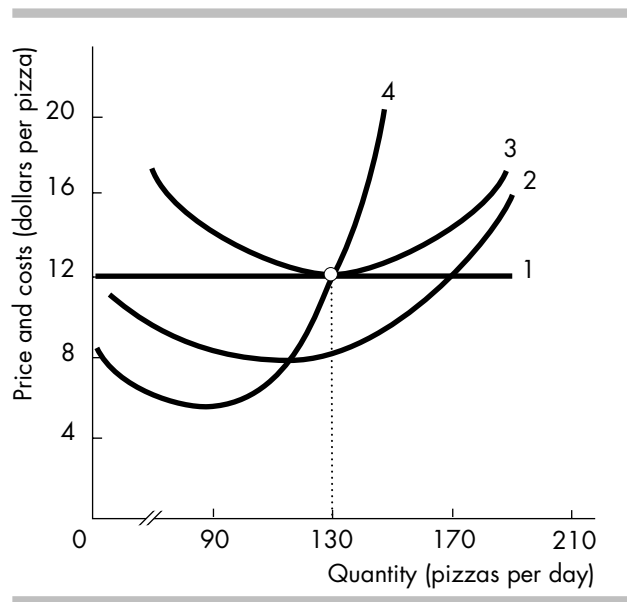
55. In the above figure, the line represented by the "2" is most likely the
    a. average fixed cost.
    b. average variable cost.
    c. total cost.
    d. average total cost.
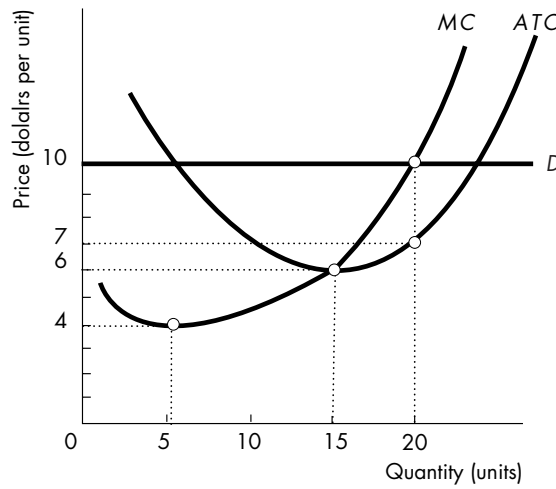
56. In the above figure, a perfectly competitive firm will produc
    a. 0 units.
    b. 5 units.
    c. 15 units
    d. 20 units.
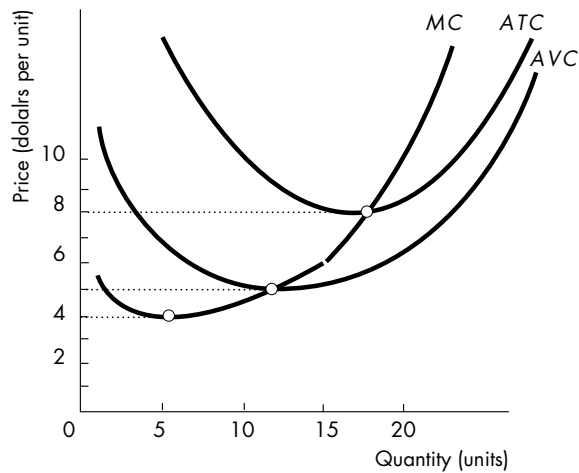
57. In the above figure, at a price of $8, the firm would produce _____ and it would _____.
    a. 0 output; incur an economic loss
    b. 0 output; earn a normal profit
    c. some output; earn a normal profit
    d. some output; earn an economic profit

58. When the market is in equilibrium
    a. Everyone has all they want of the commodity in question.
    b. there is no shortage and no surplus at the equilibrium price.
    c. the number of buyers is exactly equal to the number of sellers.
    d. the supply curve has the same slope as the demand curve.

59. When supply curve and demand curve both shift right, the
    a. quantity definitely decreases.
    b. quantity definitely increases
    c. price definitely increases
    d. price definitely decreases

60. The deadweight loss that occurs as result of a unit tax is a result of
    a. lost consumer surplus
    b. lost producer surplus
    c. lost tax revenues compared to the potential
    d. lost consumer and producer surplus

61. In an Oligopoly
    a. There are only a few firms.
    b. There is no product differentiation
    c. There is free entry and exit
    d. Firms's decisions are unrelated to each other.

62. Suppose the total cost of producing T-shirts can be represented as TC=50+2Q. The average cost of producing 5 T-shirts
    a. 2
    b. 12
    c. 52
    d. 60