

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. The price elasticity of demand for a product measures
  - A) how much price changes, given a change in demand.
  - B) the slope of the demand curve for that product.
  - C) changes in demand.
  - D) how responsive consumers are to a price change.
  - E) how responsive producers are to a price change.
  
2. The more responsive consumers are to a price change,
  - A) the more price-elastic is the supply.
  - B) the more income-elastic is the demand.
  - C) the more price-inelastic is the demand.
  - D) the more price-elastic is the demand.
  - E) None of the above.
  
3. To say there is an elastic demand for a product means that
  - A) there are relatively few substitutes, few competitors, and a short time period under consideration.
  - B) consumers are very responsive to a change in the price of the product.
  - C) consumers are not very responsive to a change in the price of the product.
  - D) if the price rises by some percentage, then the quantity demanded will fall by a smaller percentage.
  - E) there is a positive relationship between price and total revenue.
  
4. If a 20 percent increase in the price of peanuts leads to a 10 percent decrease in the quantity demanded of peanuts, then the price elasticity of demand for peanuts is 2.
  - A) True
  - B) False
  
5. Suppose 200 videotapes are rented when the price is \$4. If the price drops by \$.80, the number of videotapes rented increases to 220. Which of the following statements about the price elasticity of demand is true?
  - A) The elasticity of demand is equal to 5.
  - B) Demand is elastic.
  - C) Demand is inelastic.
  - D) Demand is unit-elastic.
  - E) The elasticity of demand is equal to 2.

6. If a 1 percent change in the price of a good causes a 1 percent change in the quantity demanded of that good, the price elasticity of demand is
- A) perfectly elastic.
  - B) elastic.
  - C) unit-elastic.
  - D) inelastic.
  - E) perfectly inelastic.
7. If a 50 percent increase in the price of pizza results in a 25 percent decrease in the quantity demanded of pizza, then the elasticity of demand for pizza
- A) is equal to  $1/2$  and demand is inelastic.
  - B) is equal to  $1/2$  and demand is elastic.
  - C) is equal to 2 and is elastic.
  - D) is equal to 2 and is inelastic.
  - E) cannot be determined from the information provided.
8. If the price elasticity of demand,  $e_d$ , is equal to 2, then a 20 percent increase in quantity demanded would result from a
- A) 40 percent increase in price.
  - B) 20 percent decrease in price.
  - C) 10 percent decrease in price.
  - D) 10 percent increase in price.
  - E) None of the above.
9. When the university increased tuition by 10 percent, the number of credit hours that students enrolled in fell by 15 percent. This university is faced with \_\_\_\_\_ demand.
- A) an elastic
  - B) an inelastic
  - C) a unit-elastic
  - D) an infinitely elastic
  - E) a perfectly inelastic
10. Suppose that technological advances increase the number of substitutes available for a product. Then,
- A) the demand for that product is likely to become more price- elastic.
  - B) the demand for that product is likely to become more price-inelastic.
  - C) the demand for that product is likely to become less price-elastic.
  - D) the supply for that product is likely to become less price-elastic.

11. If 100 units of product L are sold at a unit price of \$10 and only 25 units are sold at a unit price of \$20, one can conclude that demand for L is
- A) perfectly inelastic.
  - B) inelastic.
  - C) elastic.
  - D) infinitely elastic.
  - E) of unitary elasticity.
12. A price elasticity of demand equal to zero indicates that the demand for a product is
- A) relatively inelastic.
  - B) perfectly inelastic.
  - C) unit-elastic.
  - D) infinitely elastic.
  - E) relatively elastic.
13. Along a straight-line demand curve, demand is most inelastic
- A) at the midpoint of the demand curve.
  - B) at the vertical intercept of the demand curve.
  - C) at the lower portion of the demand curve, below the midpoint.
  - D) at the upper portion of the demand curve, above the midpoint.
  - E) None of the above.
14. When the elasticity of demand ( $e_d$ ) is greater than 1, then
- A) demand is elastic.
  - B) demand is inelastic.
  - C) the elasticity of demand is unitary.
  - D) the good is a substitute.
  - E) the good is a normal good.
15. Along a straight-line demand curve, the price elasticity decreases as price is decreased.
- A) True
  - B) False
16. Which of the following is *not* a determinant of the price elasticity of demand?
- A) The amount of time available to the consumer
  - B) The number of substitutes available for the product
  - C) The importance of the product in the consumer's total budget.
  - D) The prices of resources available to the producer of the good
  - E) None of the above.

17. Demand is more inelastic when
- A) the demand curve is steeper.
  - B) the time period becomes shorter.
  - C) a good makes up a smaller percentage of a consumer's budget.
  - D) the number of available substitutes declines.
  - E) All of the above.
18. If product X is a luxury, and for product Y there are no close substitutes, then ceteris paribus, we should expect the price elasticities of demand for X and Y to be relatively
- A) elastic and inelastic, respectively.
  - B) inelastic and elastic, respectively.
  - C) elastic and elastic, respectively.
  - D) inelastic and inelastic, respectively.
  - E) Cannot be determined from the information given.
19. The unit-elastic point along a demand curve for a product is
- A) the price at which revenue begins to decline.
  - B) the price at which revenue is at a maximum.
  - C) the price at which revenue begins to increase.
  - D) the price at which revenue is at a minimum.
  - E) the point at which price and quantity demanded are positively correlated.
20. If total revenue falls as price rises, then the demand for the product
- A) is elastic.
  - B) is unit-elastic.
  - C) is inelastic.
  - D) has a slope greater than 1.
  - E) is upward sloping.
21. If the price of a good decreases by 5 percent and total revenue does not change, then the price elasticity of demand is
- A) equal to 0.05.
  - B) perfectly elastic.
  - C) perfectly inelastic.
  - D) equal to 1.05.
  - E) unit-elastic.

22. Cross-price elasticity is defined by
- A) the change in quantity demanded divided by the change in income.
  - B) the percentage change in quantity demanded divided by the percentage change in income.
  - C) the percentage change in the quantity demanded of good X divided by the percentage change in the price of good Y.
  - D) the percentage change in income divided by the percentage change in quantity demanded.
  - E) the percentage change in the price of good X divided by the percentage change in the quantity demanded of good Y.
23. Microsoft products and Intel microchips are likely to have a cross-price elasticity of demand that is
- A) unity.
  - B) negative.
  - C) positive.
  - D) decreasing.
  - E) increasing.
24. If a 10 percent increase in the price of good Y brings forth a 25 percent increase in the quantity demanded of good X, then the cross-price elasticity of demand is equal to \_\_\_\_\_, and good Y and good X are \_\_\_\_\_.
- A) 2.5; substitutes
  - B) 0.4; substitutes
  - C) unit-elastic; not related
  - D) 0.4; complements
  - E) 2.5; complements
25. If the cross-price elasticity of demand for goods X and Y is zero, it would imply that
- A) price elasticity of demand for X is zero.
  - B) price elasticity of demand for Y is zero.
  - C) X and Y are unrelated.
  - D) X and Y are substitutes.
  - E) X and Y are complements.
26. If the cross-price elasticity of two goods is negative, then the two goods are substitutes.
- A) True
  - B) False

27. Income elasticity is a measure of
- A) whether goods are substitutes or complements.
  - B) how much quantity demanded changes in response to a price change.
  - C) whether goods are normal or inferior.
  - D) how much quantity supplied changes in response to a price change.
  - E) None of the above.
28. Which of the following is most likely to be an inferior good?
- A) Silk sheets
  - B) Membership in a private spa
  - C) Spam
  - D) A Buick
  - E) Electricity
29. As income levels fell moderately last year in the United States, it was observed that the business of bankruptcy lawyers increased substantially. It is clear from this information that, everything else held constant,
- A) the income elasticity of demand for the bankruptcy lawyers is negative and relatively low.
  - B) the income elasticity of demand for the bankruptcy lawyers is negative and relatively high.
  - C) the income elasticity of demand for the bankruptcy lawyers is positive and relatively low.
  - D) the income elasticity of demand for the bankruptcy lawyers is positive and relatively high.
  - E) the income elasticity of demand for the bankruptcy lawyers is neither positive.
30. If income increases and the demand for a product increases, then we can conclude that the
- A) marginal utility of the product will increase.
  - B) product has an inelastic demand.
  - C) product is a normal product.
  - D) product has an elastic demand.
  - E) product is an inferior product.

Use the following to answer questions 31-33:

Income	Quantity Purchased		
	Automobiles	Coffee	Margarine
\$25,000	2	10	1
\$50,000	3	8	3

31. In the table above, what is the income elasticity of demand for automobiles?
- A) .6
  - B) -.6
  - C) 1.6
  - D) -1.6
  - E) Approaching zero
32. In the table above, margarine is
- A) an inferior good.
  - B) a negative good.
  - C) a normal good.
  - D) a necessary good.
  - E) quite price-elastic.
33. In the table above, coffee is found to be
- A) an inferior good.
  - B) an aggressive good.
  - C) a normal good.
  - D) a negative good.
  - E) a conspicuous consumption good.
34. If people demand more of product T as their incomes fall, then T is considered to be
- A) an inferior good.
  - B) a complementary good.
  - C) a substitute good.
  - D) a normal good.
  - E) a luxury good.
35. The price elasticity of supply is
- A) a measure of how sellers adjust the quantity of a good they offer for sale when the price of that good changes.
  - B) a measure of how sellers adjust the price of a good when the income level of consumers changes.
  - C) a measure of how sellers adjust the price of a good when consumers change their tastes and preferences for that good.
  - D) a measure of how sellers adjust the quantity of a good they offer for sale when their inventories fluctuate unexpectedly.
  - E) a measure of how sellers adjust the quantity of a good they offer for sale when the price of a substitute good changes.

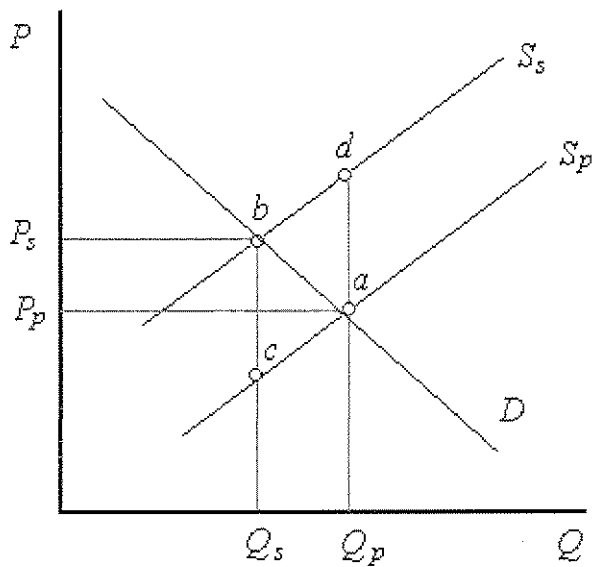
36. There are some special types of goods for which supply cannot change no matter the length of time allowed for change, such as Beethoven symphonies. The supply curve for these goods is
- A) horizontal.
  - B) an economic bad.
  - C) nonexistent.
  - D) vertical.
  - E) easy to reproduce.
37. If the elasticity of supply for violins is 4, then
- A) a 40 percent increase in the price of violins will lead to a 10 percent increase in the quantity supplied.
  - B) a 10 percent increase in the price of violins will lead to a 40 percent increase in the quantity supplied.
  - C) a 40 percent increase in the price of violins will lead to a 10 percent decrease in the quantity supplied.
  - D) a 10 percent increase in the price of violins will lead to a 40 percent decrease in the quantity supplied.
  - E) a 10 percent increase in the price of violins will lead to no change in the quantity supplied.
38. The short run is a period of time
- A) of approximately one year.
  - B) that is constant from industry to industry.
  - C) that is of sufficient length to allow firms to retrain workers, but is not long enough for firms to build new factories.
  - D) short enough that the quantities of at least one of the resources cannot be varied.
  - E) short enough that the quantities of all of the resources cannot be varied.
39. In the long run, which of the following inputs are fixed?
- A) Land
  - B) Labor
  - C) Capital
  - D) Raw materials
  - E) None of the above.
40. In which case will producers pay most of a tax?
- A) When demand is elastic and supply is inelastic
  - B) When demand is inelastic and supply is elastic
  - C) When demand is elastic and supply is elastic
  - D) When demand is inelastic and supply is inelastic
  - E) The elasticities of demand and supply make no difference on the incidence of a tax



41. When the price of coconuts declines from \$6 to \$3, the quantity demanded rises from 1 unit to 2 units. In this range of demand, the price elasticity of demand for coconuts is equal to 1.  
A) True  
B) False
42. When the price of gasoline increased from \$1 to \$3 per gallon, the quantity consumed by Bertha declined from 9 gallons to 7 gallons per week. This means Bertha's elasticity of demand for gasoline is equal to  
A) 1/4.  
B) 1/2.  
C) 2.  
D) 3.  
E) 4.
43. A market failure occurs when  
A) the market outcome is viewed as unfair by a majority of consumers.  
B) a market fails to provide the good at a zero price.  
C) quantity demanded exceeds quantity supplied.  
D) the market outcome is not the socially efficient outcome.  
E) markets produce the socially efficient level of output.
44. Private costs are  
A) the costs of enlisting in the army.  
B) the expenditures necessary to be alone.  
C) the costs borne solely by the individuals involved in the transaction.  
D) the costs of economic activity that are imposed on other private individuals.  
E) the costs of economic activity that are imposed by other private individuals.
45. Which of the following is an example of a negative externality?  
A) Your roommate plays the tuba at 3 A.M. the morning of your economics exam.  
B) You drive your car and emit carbon monoxide.  
C) Electricity generation from coal-fired plants causes acid rain.  
D) Your neighbor's dog barks incessantly.  
E) All of the above

46. An externality occurs when
- A) the full costs of the good are not included in the price of the good.
  - B) the full benefits of a good are not included in the price of the good.
  - C) costs or benefits accrue to individuals not directly involved in the transaction.
  - D) All of the above
  - E) None of the above
47. The benefits of education
- A) are minimal at best.
  - B) accrue only to the individual receiving the education.
  - C) are not worth the high costs, so education should not be subsidized.
  - D) spill over to all of society.
  - E) impose costs on others not directly involved in the transaction.

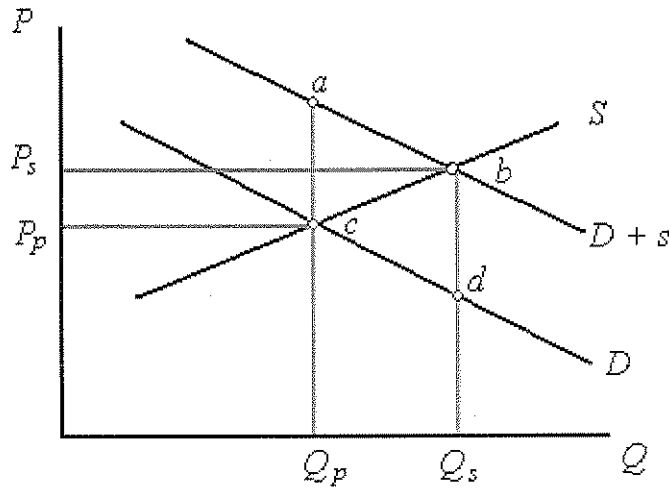
Use the following to answer questions 48-50:



The market for steel

48. In the preceding figure,  $S_p$  is the private supply curve, and  $S_s$  is the social supply curve, which includes both private costs and external costs. According to the figure,
- both points  $a$  and  $b$  are efficient.
  - both points  $a$  and  $b$  are inefficient.
  - point  $a$  represents the social equilibrium, whereas point  $b$  represents the private equilibrium.
  - point  $a$  represents the private equilibrium, whereas point  $b$  represents the social equilibrium.
  - when external costs exist, an unregulated market will produce too little output.
49. The preceding figure represents an example of
- the efficiency of private markets.
  - a positive externality.
  - a negative externality.
  - a public good.
  - the misuse of graphical analysis.
50. In the preceding figure, external costs are equal to
- $P_s - P_p$ .
  - $d$ .
  - $Q_p - Q_s$ .
  - $a$ .
  - $b - c$ .
51. If too little of a good or service, compared with the socially efficient allocation, is provided by a market, then
- private benefits and social benefits in the market are the same.
  - social costs must exceed private costs in the market.
  - positive externalities exist in the market.
  - negative externalities exist in the market.
  - All of the above
52. A potential remedy for the problem of negative externalities is
- a subsidy to producers so that they produce more.
  - a subsidy to consumers so that they consume more.
  - a tax based on the external costs of production and consumption.
  - a tax that increases production and consumption.
  - an increase in income taxes so that the government can hire more bureaucrats to solve the problem.

Use the following to answer questions 53-54:



The market for elementary education

53. In the preceding figure,  $D$  represents the private demand for education, and  $D+s$  represents the demand including the public benefits of education. According to the figure,
- A) the amount of education that would be demanded without public subsidies is  $Q_p$ .
  - B) the socially optimal amount of education is  $Q_s$ .
  - C) the government subsidy is the vertical distance between  $D$  and  $D+s$ .
  - D) a private market would provide an inefficiently small amount of education compared with the social optimum.
  - E) All of the above
54. In the preceding figure,  $D$  represents the private demand for education, and  $D+s$  represents the demand including the public benefits of education. According to the figure, a subsidy for education will result in an outcome represented by
- A) point  $a$ .
  - B) point  $b$ .
  - C) point  $c$ .
  - D) point  $d$ .
  - E) either point  $b$  or point  $d$ .

55. One way that the government may control the negative externalities of pollution is by creating a market for the externality. Such a system is known as
- A) a marketable pollution permit system.
  - B) a pollution tax.
  - C) a pollution control subsidy.
  - D) a command and control regulation.
  - E) None of the above
56. Suppose that the current price of a marketable permit to emit one ton of sulfur dioxide is \$100. If the marginal cost for a firm to reduce the next ton of sulfur dioxide is \$80, then
- A) the firm will buy the permit and pollute one more ton of sulfur dioxide.
  - B) the firm will reduce its emissions of sulfur dioxide by one ton.
  - C) the firm will increase its emissions of sulfur dioxide by one ton.
  - D) the firm will shut down.
  - E) the firm will be willing to pay up to \$200 for a permit.
57. In its simplest form, the Coase theorem states that
- A) bargaining can lead to an efficient allocation of resources in the presence of negative externalities as long as the transactions costs of bargaining are low.
  - B) governments should tax those externalities with the most inelastic demand.
  - C) a private solution such as bargaining will never lead to efficiency, so government intervention is always necessary.
  - D) bargaining can lead to an efficient solution only in the case of positive externalities.
  - E) command regulation is the most efficient method of reducing the harm caused by negative externalities.
58. The result of adverse selection is that
- A) higher quality consumers or producers drive low-quality consumers or producers out of the market.
  - B) only low-quality consumers drive low-quality producers out of the market.
  - C) only higher quality consumers drive low-quality producers out of the market.
  - D) higher quality consumers provide low-quality producers with a lucrative market position.
  - E) low-quality consumers or producers drive higher quality consumers or producers out of the market.

59. Mary is trying to sell a high-quality television set; however, none of the potential buyers is willing to pay the price Mary desires. Mary's friend Sue, an economist, thinks this might be due to a lack of information on the part of buyers. Sue uses the concept of \_\_\_\_\_ to explain to Mary why she cannot sell her TV at the price she is asking.
- A) supply and demand
  - B) adverse selection
  - C) image advertising
  - D) price discrimination
  - E) moral hazard
60. If an individual is able to change his or her behavior after a contract is made so that the behavior was not what was expected by the other party, then
- A) a moral hazard problem would exist.
  - B) negative externalities are present.
  - C) an adverse selection problem would exist.
  - D) public goods would exist.
  - E) there would be a problem of comparative advantage.
61. Which of the following is *not* an example of a moral hazard?
- A) A person who drives much less carefully after obtaining car insurance
  - B) A person who takes more care to be healthy after obtaining health insurance
  - C) A person who discovers he or she has cancer and then purchases health insurance
  - D) A person who begins to drink alcohol before driving after obtaining car insurance
  - E) A doctor who gives patient care short shrift because he or she has malpractice insurance
62. If a person drives less carefully after obtaining car insurance,
- A) that person is feeling buyer's remorse.
  - B) the reason is adverse selection.
  - C) there are no information costs.
  - D) a moral hazard exists.
  - E) the deductible must be high.
63. In many markets, problems of adverse selection and moral hazard may be resolved through
- A) bargaining among the parties.
  - B) reputations and brand names.
  - C) increasing the provision of public goods.
  - D) eliminating negative externalities.
  - E) violence.

64. One way to solve problems of asymmetric information is to have both parties share in the costs of the exchange. In the market for health insurance, such sharing of costs can be accomplished by
- A) having national health insurance.
  - B) requiring copayments and deductibles.
  - C) requiring a down payment.
  - D) forcing doctors to provide medical care for free.
  - E) All of the above
65. Logrolling occurs when
- A) costs are imposed on others not directly involved in the transaction.
  - B) consumers lack information about the quality of products.
  - C) resources are devoted to transferring wealth from consumers to producers.
  - D) politicians support each others' programs in order to win support for their own programs.
  - E) All of the above
66. Rent-seeking activities are activities that produce
- A) zero output while consuming resources.
  - B) votes in exchange for votes on other issues.
  - C) improvements in the well-being of the general public.
  - D) increases in the price of land.
  - E) increased construction of apartment buildings.

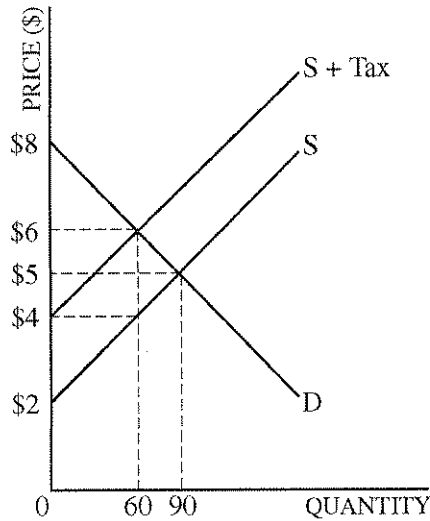
## Answer Key

1. D
2. D
3. B
4. B
5. C
6. C
7. A
8. C
9. A
10. A
11. C
12. B
13. C
14. A
15. A
16. D
17. E
18. A
19. B
20. A
21. E
22. C
23. B
24. A
25. C
26. B
27. C
28. C
29. B
30. C
31. A
32. C
33. A
34. A
35. A
36. D
37. B
38. D
39. E
40. A
41. A
42. A
43. D
44. C



- 45. E
- 46. D
- 47. D
- 48. D
- 49. C
- 50. E
- 51. C
- 52. C
- 53. E
- 54. B
- 55. A
- 56. B
- 57. A
- 58. E
- 59. B
- 60. A
- 61. B
- 62. D
- 63. B
- 64. B
- 65. D
- 66. A

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2. The graph above illustrates the market for calculators. S denotes the current supply curve, and D denotes the demand curve.
- Calculate the producer surplus before the tax.
  - Now assume a per-unit tax of \$2 is imposed whose impact is shown in the graph above.
    - Calculate the amount of tax revenue.
    - What is the after-tax price that the sellers now keep?
    - Calculate the producer surplus after the tax.
  - Is the demand price elastic, inelastic, or unit elastic between the prices of \$5 and \$6? Explain.
  - Assuming no externalities, how does the tax affect allocative efficiency? Explain.

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**Question 2**

**6 points** (1 + 3 + 1 + 1)

(a) 1 point:

- One point is earned for the correct calculation of the producer surplus:  $(1/2) \times \$3 \times 90 = \$135$ .

(b) 3 points:

- One point is earned for the correct calculation of the amount of tax revenue:  $\$2 \times 60 = \$120$ .
- One point is earned for the correct calculation of the after-tax price received by sellers: \$4.
- One point is earned for the correct calculation of the producer surplus:  $(1/2) \times \$2 \times 60 = \$60$ .

(c) 1 point:

- One point is earned for concluding that the demand price is elastic AND showing the correct calculation of the elasticity coefficient using endpoint or midpoint method, or the correct calculation using the total revenue formula.

(d) 1 point:

- One point is earned for concluding that, owing to the tax, the market is no longer allocatively efficient AND that total surplus decreases or the tax creates a dead-weight loss.