# Chapter 5 Practice

## Multiple Choice

1. As the price of a good whose units are measured along the x-axis increases, holding the consumer's income and the price of the other good constant, the budget line will:
   A. shift inward toward the origin.
   B. shift outward away from the origin.
   C. rotate such that the y-intercept stays the same and the x-intercept shifts toward the origin.
   D. rotate outward away from the origin.

2. If a consumer's preferences for two goods, say food and clothing, are such that as income increases, consumption of food and clothing both increase, we can say that:
   A. food and clothing are inferior goods.
   B. food is a normal good and clothing is an inferior good.
   C. food is an inferior good and clothing is a normal good.
   D. food and clothing are both normal goods.

3. If a consumer's preferences for two goods, say food and clothing, are such that as income decreases, consumption of food increases but consumption of clothing decreases, we can say that:
   A. food and clothing are inferior goods.
   B. food is a normal good and clothing is an inferior good.
   C. food is an inferior good and clothing is a normal good.
   D. food and clothing are both normal goods.

4. The type of elasticity of demand that is most commonly positively valued but that can be negative at times is called:
   A. income elasticity of demand and it is negative when the good is a normal good.
   B. income elasticity of demand and it is negative when the good is an inferior good.
   C. price elasticity of demand and it is negative when the slope of the demand curve is negatively sloped.
   D. None of the above.

5. On a typical optimal choice diagram, with budget lines and indifference curves, the line that connects the consumer's optimal baskets as the price of one good changes holding income and the price of the other good constant is called the consumer's:
   A. income-consumption curve.
   B. price-consumption curve.
   C. demand curve.
   D. Engel curve.

6. On a typical optimal choice diagram, with budget lines and indifference curves, the line that connects the consumer's optimal baskets as the consumer's income changes holding the prices of the goods constant is called the consumer's:
   A. income-consumption curve.
   B. price-consumption curve.
   C. demand curve.
   D. Engel curve.

7. A curve that represents the consumer's "willingness to pay" is the consumer's:
   A. exchange curve
   B. demand curve
   C. supply curve
   D. None of the above

8. Which of the following is held constant along an income-consumption curve?
   A. Income.
   B. Consumption of all goods.
   C. The price of all goods other than the good of interest.
   D. The prices of all goods.

9. An Engel curve for good $x$ describes:
   A. how the consumption of good $x$ varies as the price of good $x$ changes.
   B. how the consumption of good $x$ varies as the consumer's income changes.
   C. how the consumption of good $x$ varies as the consumption of good $y$ changes.
   D. how the consumption of good $x$ varies as price-consumption curve changes.

10. A graph that plots the consumer's level of consumption of a good against the consumer's income is called a(n):
   A. price-consumption curve.
   B. Engel curve.
   C. demand curve.
   D. good-consumption curve.

11. A negatively-sloped Engel curve implies a(n):
   A. inferior good.
   B. normal good.
   C. Giffen good.
   D. marginal good.

12. Suppose when the consumer's income rises by 100%, the consumer's consumption of good $x$ only increases 1%. We can infer that good $x$ is a(n):
   A. normal good.
   B. inferior good.
   C. Giffen good.
   D. marginal good.

13. Suppose when the consumer's income rises by 100%, the consumer's consumption of good $x$ falls by 1%. We can infer that good $x$ is a(n):
    A. normal good.
    B. inferior good.
    C. Giffen good.
    D. marginal good.

14. Suppose when the consumer's income rises by 100%, the consumer's consumption of good $x$ only increases by 1%. We can infer that the consumer's income elasticity for good $x$ is:
    A. –0.01
    B. –1
    C. 0.01
    D. 1

15. Suppose when the consumer's income rises by 100%, the consumer's consumption of good $x$ falls by 1%. We can infer that the consumer's income elasticity for good $x$ is:
    A. –1
    B. –0.01
    C. 1
    D. 0.01

16. Suppose the consumer's income elasticity for good $x$ is -0.10 when monthly income is $1,000, and the consumer's income elasticity for good $x$ is 0.10 when monthly income is $2,000. From this information we can infer that
    A. good $x$ is an inferior good for low levels of income and a superior good for high levels of income.
    B. good $x$ is a normal good for low levels of income and an inferior good for high levels of income.
    C. good $x$ in an inferior good for low levels of income and a normal good for high levels of income.
    D. good $x$ is a Giffen good.

17. In order to identify a consumer's demand curve from an optimal choice diagram we:
    A. change the consumer's income, holding the prices of both goods constant, and identify the baskets the consumer chooses with each income level.
    B. change the price's of both goods, holding income constant, and identify the baskets the consumer chooses with each price level.
    C. change the price of one good, holding income and the price of the other good constant, and identify the baskets the consumer chooses with each price level.
    D. change the price of one good and then change the income level so that the consumer achieves the same level of utility as before the price change and then identify the optimal consumption baskets at each price level.

18. The consumer's demand curve can be obtained analytically by solving which two equations?

A. $MU_x/MU_y = P_x/P_y;\ U = \overline{U}$ where $\overline{U}$ is the initial level of utility.

B. $MU_x/MU_y = P_x/P_y;\ P_xX + P_yY = I$

C. $P_xX + P_yY = I;\ U = \overline{U}$ where $\overline{U}$ is the initial level of utility.

D. $MU_x/MU_y = P_x/P_y;\ U = \overline{U}$ where $\overline{U}$ is the final level of utility.

19. Suppose the consumer's utility function is given by $U(x,y) = \sqrt{xy}$. The equation for this consumer's demand curve for $x$ is:

A. $x = I$

B. $x = \frac{I}{2P_x}$

C. $x = 2P_x$

D. $x = \frac{I}{4P_x}$

20. Suppose the consumer's utility function is given by $U(x,y) = x^{1/4}y^{3/4}$. The equation for this consumer's demand curve for $x$ is:

A. $x = \frac{I}{2P_x}$

B. $x = \frac{I}{4P_x}$

C. $x = \frac{I}{P_x}$

D. $x = \frac{3I}{4P_x}$

21. Suppose the consumer's utility function is given by $U(x,y) = xy + y$. The equation for this consumer's demand curve for $x$ when $I > P_x$ is:

A. $x^d = 0$

B. $x^d = \frac{I}{2P_x}$

C. $x^d = \frac{I}{2P_x} - \frac{1}{2}$

D. $x^d = ½$

22. Suppose the consumer's utility function is given by U(x,y) = xy + y. The equation for this consumer's demand curve for y when $I < P_x$ is:
    A. $y^d = 0$
    B. $y^d = \frac{I}{2P_y}$
    C. $y^d = \frac{I}{P_y}$
    D. $y^d = ½$

23. As the price of a good increases, holding the consumer's income and the price of the other good constant, the budget line will:
    A. shift inward toward the origin.
    B. shift outward away from the origin.
    C. rotate the budget line inward toward the origin.
    D. rotate the budget line outward away from the origin.

24. A positively-sloped Engel curve implies a(n):
    A. inferior good.
    B. normal good.
    C. Giffen good.
    D. marginal good.

25. Suppose the consumer's utility function is given by U(x,y) = xy + y. The equation for this consumer's demand curve for $x$ when $I < P_x$ is:
    A. $x^d = 0$
    B. $x^d = \frac{I}{2P_x}$
    C. $x^d = \frac{I}{2P_x} - \frac{1}{2}$
    D. $x^d = ½$

26. The substitution effect is:
    A. the change in the amount of the good consumed holding the level of income constant.
    B. the change in the amount of the good consumed as the price of the good changes holding income constant.
    C. the change in the amount of the good consumed as the price of the good changes holding utility constant.
    D. the change in the amount of the good consumed holding relative prices constant and changing the level of income.

27. The income effect is:
    A. the change in the amount of the good consumed holding the level of income constant.
    B. the change in the amount of the good consumed as the price of the good changes holding income constant.
    C. the change in the amount of the good consumed as the price of the good changes holding utility constant.
    D. the change in the amount of the good consumed as the consumer's utility changes holding the price of the good constant.

28. Giffen goods probably occur most frequently when the good in question is a:
    A. luxury item like jewelry or yachts.
    B. low-priced item that is insignificant relative to a person's total consumption.
    C. a staple of a person's consumption pattern or represents a big share of a person's total expenditures.
    D. technology-related item.

29. The substitution effect graphically is always denoted:
    A. by movement along the original indifference curve, whereas the income effect is represented by a rotation of the budget line.
    B. by moving in the direction of the item that is becoming relatively more expensive.
    C. by moving in the direction of the item that is becoming relatively cheaper and the income effect is always denoted by a rotating budget line.
    D. by movement along the original indifference curve, whereas the income effect is represented by a parallel shift of the budget line.

30. The substitution effect associated with a change in price describes:
    A. the change in the level of consumption as a result of the consumer's change in utility, holding price constant.
    B. the change in the level of consumption, holding utility constant.
    C. the change in relative purchasing power.
    D. Both a) and c) are correct.

31. The income effect associated with a change in the price of good x:
    A. describes the change in the level of consumption as a result of the consumer's change in utility, holding price constant.
    B. describes the change in the level of consumption, holding utility constant.
    C. describes the change in relative purchasing power.
    D. can be either negative or positive.

32. Under what circumstances is the demand curve downward-sloping?
    A. When the good is not a Giffen good.
    B. When the good is a Giffen good.
    C. When the good is an inferior good and the income effect outweighs the substitution effect.
    D. The demand curve is always downward-sloping.

33. Under what circumstances is the demand curve upward-sloping?
    A. When the good is a normal good.
    B. When the good is an inferior good and the substitution effect outweighs the income effect.
    C. When the good is an inferior good and the income effect outweighs the substitution effect.
    D. The demand curve can never be upward-sloping.

34. If $x$ is an inferior good and the price of $x$ falls:
    A. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase more $x$.
    B. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase less $x$.
    C. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase more $x$.
    D. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase less $x$.

35. If $x$ is an inferior good and the price of $x$ rises:
    A. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase more $x$.
    B. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase less $x$.
    C. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase more $x$.
    D. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase less $x$.

36. Giffen goods:
    A. are normal goods with a negative income effect.
    B. are inferior goods with an income effect that is smaller in magnitude than the substitution effect.
    C. are inferior goods with an income effect that is greater in magnitude than the substitution effect.
    D. have downward sloping demand curves.

37. The method for finding the substitution effect of a price change on consumption of good x is to:
    A. Find the initial optimal consumption basket before the price change and then find the decomposition basket and measure the change in consumption of the good between the two baskets.
    B. Find the initial optimal consumption basket before the price change, then find the final optimal consumption basket after the price change and measure the change in consumption of the good between the two baskets.
    C. Find the final optimal consumption basket after the price change and then find the decomposition basket and measure the change in consumption of the good between the two baskets.
    D. Find the initial and final optimal consumption baskets, before and after the price change, find the decomposition basket, and add up the total changes between the two optimal baskets and the decomposition basket.

38. Let U(x,y) = $\sqrt{xy}$. Let I = \$100, $P_x$ = \$10 and $P_y$ = \$10 be the initial set of prices and income. Now, let $P_x$ rise to \$25. What are the (approximate) substitution and income effects of this change in prices?
    A. Income effect = -3.3; Substitution Effect = -2.1
    B. Income effect = -2.3; Substitution Effect = -1.7
    C. Income effect = -1.3; Substitution Effect = -1.7
    D. Income effect = -1.7; Substitution Effect = -1.3

39. Identify the statement that is true. Assume that the price of good $x$ increases.
    A. If x is a normal good, both the income and substitution effects lead to a fall in consumption of x.
    B. The substitution effect leads to a decrease in consumption of x only if x is an inferior good.
    C. If x is a normal good, the substitution effect alone leads to a decrease in consumption of x.
    D. If x is an inferior good, the income effect alone leads to a decrease in consumption of good x.

40. If $x$ is a normal good and the price of $x$ falls:
    A. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase more $x$.
    B. the substitution effect will induce the consumer to purchase more $x$ and the income effect will induce the consumer to purchase less $x$.
    C. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase more $x$.
    D. the substitution effect will induce the consumer to purchase less $x$ and the income effect will induce the consumer to purchase less $x$.

41. Consumer surplus is defined as:
    A. The difference between the discounted amount and the original amount purchased of a good.
    B. The difference between the maximum amount a consumer is willing to pay for a good and the amount he or she must actually pay when purchasing
    C. The difference between the cost of producing a good and its purchase price.
    D. The amount of the good purchased by a consumer over and above the minimum amount that the customer wanted of the good.

42. Consider a market with $Q^d = 240 - 6P$ and $Q^s = 2P$. What is the consumer surplus in this market?
    A. 1,000
    B. 300
    C. 750
    D. 500

43. Suppose that a consumer's demand curve for a good can be expressed as $P = 50 - 4Q^d$. Suppose that the market is initially in equilibrium at a price of $10. What is the consumer surplus at the original equilibrium price?
    A. 100
    B. 150
    C. 200
    D. 250.

44. Suppose that a consumer's demand curve for a good can be expressed as $P = 50 - 4Q^d$. Suppose that the market is initially in equilibrium at a price of $10. Now suppose that the price rises to $14. What is the change in consumer surplus?
    A. An increase of 38
    B. A decrease of 38
    C. A decrease of 42
    D. A decrease of 36

45. Compensating variation is:
    A. the change in income necessary to hold the consumer at the final level of utility as price changes.
    B. always the area under the demand curve and above the price paid.
    C. the change in income necessary to restore the consumer to the initial level of utility.
    D. the difference in the consumer's income between the purchase of the original basket and the new basket at the old prices.

46. The concept of compensating variation me
    A. the change in income necessary to hold the consumer at the final level of utility as price changes.
    B. the change in income necessary to restore the consumer to the initial level of utility as price changes.
    C. the income effect.
    D. the substitution effect.

47. The concept of equivalent variation me
    A. the change in income necessary to hold the consumer at the final level of utility as price changes.
    B. the change in income necessary to restore the consumer to the initial level of utility as price changes.
    C. the income effect.
    D. the substitution effect.

48. One way of thinking of consumer surplus might be described as:
    A. the total value of the sum of the difference of all consumers' willingness to pay for an item relative to the actual cost of the item in the market.
    B. the excess amount that consumers earn relative to the poverty line.
    C. the level of satisfaction that consumers reach from consuming an item.
    D. the excess of consumer demand relative to supply.

49. Let U(x,y) = $\sqrt{xy}$. Let I = \$100, $P_x$ = \$25 and $P_y$ = \$10 be the initial set of prices and income. Now, let $P_x$ fall to \$10. What is the approximate compensating variation for this change in prices?
    A. 24
    B. 30
    C. 34
    D. 40

50. We can derive a market demand curve for an item by:
    A. multiplying each individual's demand curve by the number of consumers in the marketplace.
    B. summing all of the quantities that would be demanded by individual consumers at different prices for that good and plotting the total quantities against price.
    C. looking at how the equilibrium changes when we shift each individual's supply curve.
    D. subtracting the price of an item from the supply curve.

51. Identify which of the following statements is false.
    A. The market demand curve is the horizontal sum of the individual demands, once we sum the price vertically.
    B. The market demand curve is the horizontal sum of the individual demands for each price.
    C. The market demand curve maintains the properties of the individual demand curves.
    D. All of the above statements are true.

52. Leisure can be:
    A. either a normal good or an inferior good.
    B. only a normal good.
    C. considered to be an inferior good when a parallel outward shift of the budget line leads to an increase in leisure.
    D. considered to be a normal good when a parallel outward shift of the budget line leads to a decrease in leisure.

53. One way to measure the opportunity cost of an hour of leisure is:
    A. the wage rate that an individual could earn for that hour.
    B. the cost of going to a restaurant every evening to eat.
    C. the cost of visiting a museum just for fun.
    D. the cost of the cleaning service that I hire to clean my house because I work 50 hours per week.

54. Which of the following statements describes a backward-bending labor supply curve?
    A. Every hour that I work represents a loss of an hour of leisure.
    B. I asked for extra hours this month to pay for a new bicycle.
    C. When I received my last raise, I cut back on my overtime hours so that I could work fewer hours but earn the same amount of money per week.
    D. I worked more hours when I was younger.

55. Identify which of the following statements is false. The "substitution bias" of the CPI:
    A. means that the CPI can either understate or overstate the actual change in cost of living faced by consumers.
    B. refers to the fact that the CPI measures the change in expenditures necessary to consume a fixed basket of goods, whereas in reality the optimal consumption basket changes as prices change.
    C. can be corrected partially by periodically updating the fixed basket of goods used in calculations.
    D. refers to the fact that those who construct the CPI are biased away from including certain types of goods in the fixed basket of goods used in their calculations.

## True or False

56. The Engel curve for a normal good is upward-sloping.

57. The Engel curve for an inferior good is downward-sloping.

58. A negatively-sloped Engel curve implies an inferior good.

59. A negatively-sloped Engel curve implies a normal good.

60. A negatively-sloped Engel curve implies a Giffen good.

61. A negatively-sloped Engel curve implies a marginal good.

62. Suppose the consumer's income elasticity for good $x$ is -0.10 when monthly income is \$1,000, and the consumer's income elasticity for good $x$ is 0.10 when monthly income is \$2,000. From this information we can infer that good $x$ is an inferior good for low levels of income and a superior good for high levels of income.

63. Suppose the consumer's income elasticity for good $x$ is -0.10 when monthly income is \$1,000, and the consumer's income elasticity for good $x$ is 0.10 when monthly income is \$2,000. From this information we can infer that good $x$ is a normal good for low levels of income and an inferior good for high levels of income.

64. Suppose the consumer's income elasticity for good $x$ is -0.10 when monthly income is \$1,000, and the consumer's income elasticity for good $x$ is 0.10 when monthly income is \$2,000. From this information we can infer that good $x$ in an inferior good for low levels of income and a normal good for high levels of income.

65. Suppose the consumer's income elasticity for good $x$ is -0.10 when monthly income is \$1,000, and the consumer's income elasticity for good $x$ is 0.10 when monthly income is \$2,000. From this information we can infer that good $x$ is a Giffen good.

66. It is possible for an Engel curve to be positively sloped for a certain region of income and negatively sloped for another region.

67. The income elasticity of demand for a normal good is negative.

68. Assume that the price of good $x$ increases. The substitution effect shows that the consumption of good $x$ falls, regardless of whether $x$ is a normal or inferior good.

69. Assume that the price of good $x$ increases. The income effect shows that the consumption of good $x$ rises if good $x$ is an inferior good.

70. Assume that the price of good $x$ increases. The overall effect shows that the consumer purchases more of good $x$ if good $x$ is a Giffen good.

71. Assume that the price of good $x$ increases. The overall effect shows that the consumer purchases more of good $x$ if good $x$ is an inferior good.

72. The substitution effect is unambiguous in its direction.

73. The direction of the income effect depends on whether the good is a normal or an inferior good.

74. For normal goods, the income and substitution effects work in the same direction.

75. Some normal goods are Giffen goods.

76. As the price of an inferior good increases, the income effect will induce the consumer to consume less of the good.

77. If the price of a good falls, the substitution effect will always induce the consumer to consume at least as much of the good as before the price change.

78. All Giffen good are inferior goods.

79. As the price of a normal good falls, the income effect will result in an increase in consumption of the good.

80. Assume that the price of good $x$ increases. If x is a normal good, both the income and substitution effects lead to a fall in consumption of x.

81. Assume that the price of good $x$ increases. The substitution effect leads to a decrease in consumption of x only if x is an inferior good.

82. Assume that the price of good $x$ increases. If x is a normal good, the substitution effect alone leads to a decrease in consumption of x.

83. Assume that the price of good $x$ increases. If x is an inferior good, the income effect alone leads to a decrease in consumption of good x.

84. The market demand curve is the horizontal sum of the individual demands, once we sum the price vertically.

85. The market demand curve is the horizontal sum of the individual demands for each price.

86. The market demand curve maintains the properties of the individual demand curves.

87. The "substitution bias" of the CPI means that the CPI can either understate or overstate the actual change in cost of living faced by consumers.

88. The “substitution bias” of the CPI refers to the fact that the CPI measures the change in expenditures necessary to consume a fixed basket of goods, whereas in reality the optimal consumption basket changes as prices change.

89. The “substitution bias” of the CPI can be corrected partially by periodically updating the fixed basket of goods used in calculations.

90. The “substitution bias” of the CPI refers to the fact that those who construct the CPI are biased away from including certain types of goods in the fixed basket of goods used in their calculations.

## Answers

### Multiple Choice

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

### True and False

56. True
57. True
58. True
59. False
60. False
61. False
62. False
63. False
64. True
65. False
66. True
67. False
68. True
69. True
70. True
71. False
72. True
73. True
74. True
75. True
76. False
77. True
78. True
79. True
80. True
81. False
82. False
83. False
84. False
85. True
86. True
87. True
88. True
89. True
90. False