1. What is the name of the social assistance program that provides cash payments to single parents whose income is below a specified level?
   A)   Supplemental Nutrition Assistance Program
   B)   Mainstream Vouchers
   C)   Emergency Food Assistance Program
   D)   Temporary Assistance for Needy Families

2. _____ tools refer to the set of tools designed to understand the mechanics behind economic decision making.
   A)   Efficiency
   B)   Empirical
   C)   Theoretical
   D)   Data

3. _____ tools refer to the set of tools designed to analyze data and answer questions raised by theoretical analysis.
   A)   Efficiency
   B)   Empirical
   C)   Theoretical
   D)   Abstract

4. Which of the following is NOT consistent with nonsatiated preferences?
   A)   Maria prefers four hamburgers to three hamburgers.
   B)   Kevin enjoys the third hamburger more than the fourth hamburger.
   C)   Lisa prefers five hamburgers to six hamburgers.
   D)   Ron likes to take home leftover hamburgers for later use.

5. Consider three bundles:

   Bundle A: 2 hamburgers and 1 soda
   Bundle B: 2 hamburgers and 2 sodas
   Bundle C: 1 hamburger and 1 soda

   Which of the following does NOT violate the assumption of nonsatiated preferences?
   A)   Laura prefers Bundles B and C to Bundle A.
   B)   Mike prefers Bundle B to Bundle A and Bundle C to Bundle B.
   C)   Robin is indifferent between Bundle A and Bundle C.
   D)   Julio prefers Bundles A and B to Bundle C.

6. Consider three bundles:

   Bundle A: 2 DVDs and 3 CDs
   Bundle B: 3 DVDs and 1 CD
   Bundle C: 1 DVD and 3 CDs

   Which of the following violates the assumption of nonsatiated preferences?
   A) Bart prefers Bundle C to B and Bundle A to C.
   B) Mona prefers Bundle C to B and is indifferent between Bundles A and B.
   C) Don prefers Bundle A to C and is indifferent between Bundles B and C.
   D) Patty prefers Bundle A to C and Bundle B to C

7. Consider three bundles:

   Bundle A: 1 shirt and 2 hats
   Bundle B: 2 shirts and 2 hats
   Bundle C: 3 shirts and 1 hat

   Which of the following violates the assumption of nonsatiated preferences?
   A) Nancy prefers Bundle B to C.
   B) Diane prefers Bundle B to A.
   C) Steve prefers Bundle C to B.
   D) Ryan prefers Bundle A to B.

8. Graphically, the budget constraint can be described as:
   A) the slope being the difference between the prices of the goods.
   B) the slope being the sum of the prices of the goods.
   C) a downward sloping line.
   D) the slope being the product of the prices of the goods.

9. Suppose Jon likes to eat both pizza and hamburgers. As John consumes less pizza and holds steady his consumption of hamburgers, the marginal utility of a piece of pizza _____ and the marginal utility of a hamburger _____.
   A) increases; is unchanged
   B) increases; increases
   C) decreases; decreases
   D) decreases; is unchanged

10. Assume a convex utility function with an interior solution in which a consumer chooses some of each good. Which of the following is NOT represented by the slope of the budget constraint?
    A) marginal rate of substitution
    B) relative price of one good (drawn on horizontal axis) in terms of other good (drawn on vertical axis)
    C) relative price of one good (drawn on vertical axis) in terms of other good (drawn on horizontal axis)
    D) ratio of the marginal utilities

11. This figure shows a consumer's budget constraint for apples (vertical axis) and oranges (horizontal axis). If the price of oranges increases, how is the budget constraint affected?
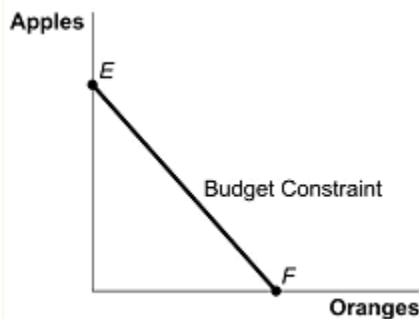

    A) The budget constraint shifts inward.
    B) The budget constraint does not change.
    C) The vertical intercept *E* decreases and the horizontal intercept *F* remains the same, making the budget constraint flatter.
    D) The vertical intercept *E* is unchanged and the horizontal intercept *F* decreases, making the budget constraint steeper.

12. Suppose that Gustavo spends all of his income on DVDs and (legally) downloaded songs. At the optimum, which of the following must be TRUE?
    A) Gustavo spends all of his income on songs and none on DVDs if songs are cheaper.
    B) Gustavo spends all of his income on DVDs and none on songs if DVDs are cheaper.
    C) The marginal utility of the last song downloaded equals the marginal utility of the last DVD purchased.
    D) The ratio of the marginal utility of the last song downloaded to the price of the song is equal to the ratio of the marginal utility of the last DVD to the price of the DVD.

13. Which of the following is TRUE when a consumer is maximizing her utility?
    A) She consumes where the budget constraint intersects the midpoint of her indifference curve.
    B) She consumes halfway between the two intersections of her budget constraint and indifference curve.
    C) She consumes at the point at which the slope of her indifference curve is zero.
    D) She consumes at the point at which her budget constraint is tangent to her indifference curve.

14. Suppose Tyrone spends his entire income on books and clothing. If the prices of both books and clothing fall by 10%, which of the following statements is TRUE?
    A) Tyrone is not able to move to a new indifference curve.
    B) The budget constraint shifts outward.
    C) The budget constraint becomes flatter (the slope is smaller in absolute value).
    D) The budget constraint becomes steeper (the slope is larger in absolute value).

15. Suppose Tim spends his entire income on hot dogs and hamburgers and consumes at least some of both. Now suppose that the price of hot dogs increases while the price of hamburgers remains the same. If Tim is compensated so that his utility is held constant, which of the following must be TRUE?
    A) Tim is better off than he was.
    B) Tim's utility remains the same.
    C) Tim consumes more hamburgers and fewer hot dogs.
    D) Tim consumes more hot dogs and fewer hamburgers.

16. Suppose that you buy a lot of music and that the prices of CDs go up. The income effect means that you buy _____ CDs because _____.
    A) fewer; your nominal income has been reduced
    B) fewer; your real income has been reduced
    C) fewer; you now enjoy music less
    D) fewer; CDs are less expensive relative to other goods

17. Suppose that you buy a lot of music and that the prices of CDs go up. The substitution effect means that you buy _____ CDs because _____.
    A) fewer; your nominal income has been reduced
    B) fewer; your real income has been reduced
    C) fewer; you now enjoy music less
    D) fewer; CDs are more expensive relative to other goods

18. If pasta is an inferior good and if the price of pasta increases, the income effect _____ the quantity demanded, and the substitution effect _____ the quantity demanded.
   A) reduces; decreases
   B) increases; increases
   C) reduces; increases
   D) increases; decreases

19. Suppose under TANF your state provides an income guarantee of $5,000 and a benefit reduction rate of 40%. The typical recipient can work up to 2,000 hours per year at a wage of $10 per hour. If the recipient works 300 hours per year, the effective take-home wage rate is:
   A) $0 per hour.
   B) $4 per hour.
   C) $6 per hour.
   D) $10 per hour.

20. Under TANF your state provides an income guarantee of $5,000 and a benefit reduction rate of 40%. The typical recipient can work up to 2,000 hours per year at a wage of $10 per hour. By how much is the benefit reduced if the recipient works 300 hours per year?
   A) $3,000
   B) $1,800
   C) $1,200
   D) $600

21. Suppose that a 5% rise in the price of apples does not cause the quantity demanded to change. The elasticity of demand for apples would then be:
   A) 0.
   B) –1.
   C) –2.
   D) infinitely large.

22. Suppose that a 50% increase in the price of a good causes a 25% reduction in the quantity demanded. The elasticity of demand is:
   A) –0.5.
   B) –1.
   C) –1.33.
   D) –2.

23. When production is said to be characterized by diminishing marginal productivity:
    A) unskilled workers are less productive than skilled workers.
    B) output must increase with each additional unit of the input used in production.
    C) increasing the amount of one input used means more of another input must be used.
    D) adding additional inputs may still cause output to increase.

24. Consumer surplus is highest when the demand curve is _____; producer surplus is greatest when the supply curve is _____.
    A) elastic; elastic
    B) inelastic; inelastic
    C) perfectly elastic; perfectly inelastic
    D) inelastic; elastic

25. Consumer surplus is greater than producer surplus when the demand curve is _____; producer surplus is greater than consumer surplus when the demand curve is _____.
    A) elastic; elastic
    B) inelastic; inelastic
    C) perfectly elastic; perfectly inelastic
    D) inelastic; elastic

26. In the accompanying figure, consumer surplus is given by area _____, while producer surplus is given by area _____.
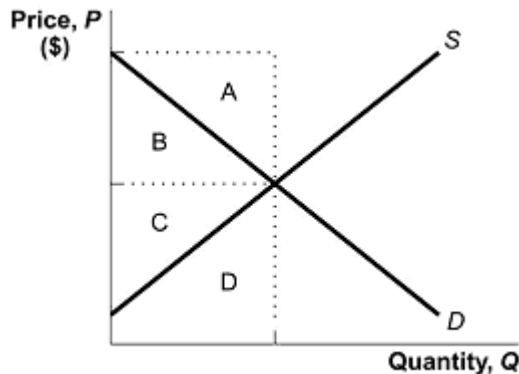
    A) A; D
   B) $A + B$; $C + D$
    C) D; A
    D) B; C

27. Consumer surplus can be defined as the difference between:
    A)   the demand curve and the price of the good.
    B)   the supply curve and the price of the good.
    C)   the supply curve and the demand curve.
    D)   the price charged by sellers and the price paid by buyers.

28. Producer surplus can be defined as the difference between:
    A)   the demand curve and the price of the good.
    B)   the supply curve and the price of the good.
    C)   the supply curve and the demand curve.
    D)   the price charged by sellers and the price paid by buyers.

29. The First Fundamental Theorem of Welfare Economics states that:
    A)   the competitive equilibrium, where supply equals demand, can always be achieved through government intervention.
    B)   social efficiency can be achieved if and only if government intervenes in the economy.
    C)   the competitive equilibrium, where supply equals demand, maximizes social efficiency.
    D)   social efficiency cannot be achieved in any competitive equilibrium.

30. Suppose voters choose to increase their state's minimum wage to $6 per hour from $3 per hour. The accompanying figure shows the market for unskilled labor in that state after the change. Area(s) _____ is the total consumer surplus after this change, while area(s) _____ is the deadweight loss.
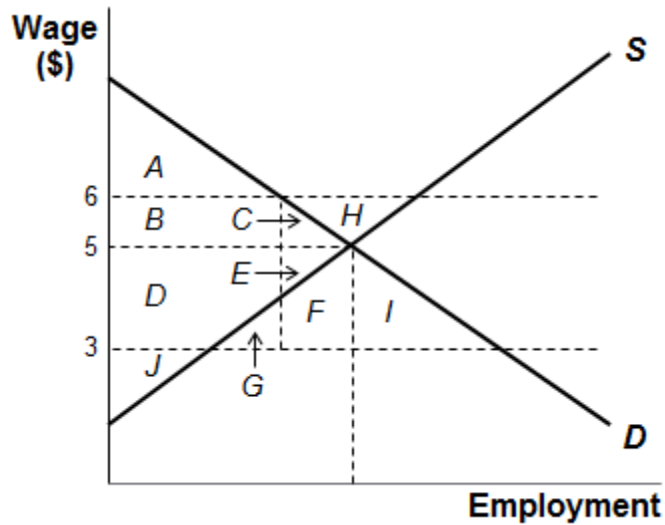
A) $A; C + E$
B) $A + B + C; F$
C) $B + C; H$
D) $A + B; C + E$

31. Suppose voters choose to increase their state's minimum wage to $6 per hour from $5 per hour. The accompanying figure shows the market for unskilled labor in that state after the change. Area(s) _____ is the total producer surplus after this change.
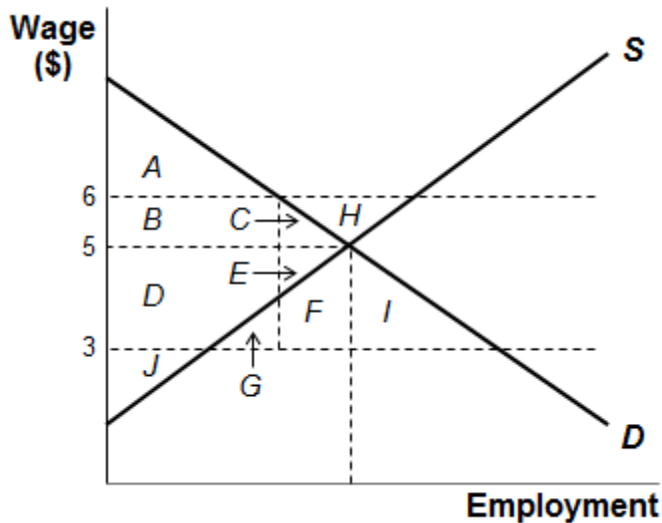
A) $B + D$
B) $B + D + J$
C) $B + C$
D) $D + E + J$

32. A utilitarian social welfare function implies that:
    A) the well-being of the worst-off member is maximized.
    B) income redistribution reduces social welfare.
    C) everyone in society has the same marginal utility.
    D) no redistribution should occur.

33. A Rawlsian social welfare function implies which of the following?
    A) The well-being of the worst-off member is maximized.
    B) The sum of individual utilities is maximized.
    C) The marginal utility of everyone in society is equal.
    D) No redistribution should occur.

34. Which of the following best explains the view that nothing matters except that individuals have met a basic level of need for goods, such as housing or medical care, and that once they have met this basic level, income distribution is irrelevant?
    A) First Fundamental Theorem of Welfare Economics
    B) utilitarian social welfare function
    C) Rawlsian social welfare function
    D) commodity egalitarianism

35. Cutting TANF benefits would _____ social efficiency and _____ equity in society.
    A) increase; increase
    B) decrease; decrease
    C) increase; would not change
    D) increase; decrease

36. Carefully explain the principle of diminishing marginal utility using a relevant example.

37. Assume that both air travel and travel by car are normal goods and you spend a fixed amount of income on both goods. Suppose that when the price of crude oil goes up by 30%, the price per mile of air travel goes up by 10% and the price per mile traveled by car goes up by 20%. Explain how the increase in the price of crude oil affects air travel and travel by car in terms of the income effect, the substitution effect, and the overall (net) effect.

38. Explain what is represented by the slope of the budget line and the slope of the indifference curve. How does an increase in income affect the slopes?

39. Suppose you receive a raise from $10 to $20. Explain how both the income and substitution effects would affect your labor supply at the new and higher wage. What will be the effect overall?

40. Suppose that the market demand curve is given by $Q = 100 - P$, and the market supply curve is given by $Q = 3P$.

    (a) What is the deadweight loss that would result if the government were to institute a price cap of 20 in this market?
    (b) What is the deadweight loss that would result if the government were to institute a price cap of 30 in this market?

41. Let Jane's utility function be given by:

$$U = 100 \times \ln(C) + 50 \times \ln(L)$$

where C is consumption (in dollars) per year and L is hours of leisure per year. Jane can make \$15 per hour and can work up to 2,000 hours per year.

(a) Set up the maximization problem, showing the budget constraint.
(b) How many hours will Jane want to work per year?

Answer Key

1. D
2. C
3. B
4. C
5. D
6. B
7. D
8. C
9. A
10. C
11. D
12. D
13. D
14. B
15. C
16. B
17. D
18. D
19. C
20. C
21. A
22. A
23. D
24. B
25. D
26. D
27. A
28. B
29. C
30. A
31. B
32. C
33. A
34. D
35. D
36. The principle of diminishing marginal utility suggests that the consumption of each additional unit of a good makes an individual less happy than the consumption of the previous unit. Consider the example of concerts. There is one particular heavy metal band you want to see, so you buy tickets to all four of the Headbanger concerts in your area. You get the highest marginal utility from the first concert, less from the next, and so on.
37. If the price of oil goes up, your real income falls because your income can buy less of both air and car travel. Consequently, the income effect will reduce your travel by air and by car because they are both normal goods. However, because the price of car travel

has increased more than the price of air travel, air travel is now a more attractive option. Therefore, the substitution effect of the increase in the price of oil is to increase the amount of air travel you do and decrease the amount of car travel you do. The net effect on car travel is clear: You will drive less. However, the net effect on air travel depends on the relative magnitude of the income and substitution effects.

38. The slope of the budget constraint is the ratio of the prices of the two goods. This is the rate at which the market allows you to trade off one good for another. The slope of the indifference curve is the marginal rate of substitution, which is the rate at which the consumer wants to trade off one good for another. An increase in income does not change the slope of either, because the ratio of prices has not changed (the slope of the budget constraint) and the consumer's preference for trading off one good for the other has not changed (the slope of the indifference curve).

39. At the higher wage, you will have a higher income. The income effect means that you'll consume more of every normal good, including leisure. That is, the income effect means you'll work less. The substitution effect results because leisure is now more expensive than it was before your wage was increased. Before, an hour of leisure cost you only $10, and now it costs you $20. Consequently, the substitution effect means that you'll work more because leisure is more expensive. Whether you ultimately work more or less has to do with which effect is bigger.

40. (a) The market equilibrium with no government intervention is $P = 25$ and $Q = 75$. If the price is capped at 20, only 60 units are produced. The social surplus from the last 15 units produced is $150, and because they aren't being produced anymore, that means that the deadweight loss is $150.

(b) Because the price in market equilibrium (25) is less than 30, this price cap doesn't affect the market at all. Therefore, there is no deadweight loss.

41. (a) The problem is as follows:
  Max $U = 100 \times \ln(C) + 50 \times \ln(L)$ subject to $C = 15 \times (2{,}000 - L)$
The budget constraint simply states that consumption must be equal to $15 per hour × hours worked. Since hours worked is simply $2{,}000 - L$, we write it that way so that everything is in terms of L.

(b) Substituting the budget constraint into the utility function, we get
  $U = 100 \times \ln(30{,}000 - 15L) + 50 \ln(L)$

Taking the derivative of U with respect to L and setting it equal to zero, we get
  $100/(30{,}000 - 15L) \times (-15) + 50/L = 0$
  $1{,}500/(30{,}000 - 15L) = 50/L$

After cross-multiplying, we get
  $1{,}500L = 50 \times (30{,}000 - 15L)$
  $1{,}500L = 1{,}500{,}000 - 750L$
  $2{,}250L = 1{,}500{,}000$
  $L = 666.67$

So Jane will work 666.67 hours per year.