

1. If she spends all of her income on breadfruits and melons, Natalie can just afford 9 breadfruits and 10 melons per day. She could also use her entire budget to buy 3 breadfruits and 12 melons per day. The price of breadfruits is 8 yen each. How much is Natalie's income per day?

- a. 313 yen
- b. 317 yen
- c. 309 yen
- d. 303 yen
- e. None of the above.

ANS: E

2. In year 1, the price of good x was \$4, the price of good y was \$1, and income was \$70. In year 2, the price of x was \$9, the price of good y was \$2, and income was \$70. On a graph with x on the horizontal axis and y on the vertical, the new budget line is

- a. steeper than the old one and lies below it.
- b. steeper than the old one and lies above it.
- c. flatter than the old one and lies below it.
- d. flatter than the old one and lies above it.
- e. None of the above.

ANS: A

3. Nick's indifference curves are circles, all of which are centered at (12, 12). Of any two indifference circles, he would rather be on the inner one than the outer one.

- a. Nick's preferences are not complete.
- b. Nick prefers (16, 17) to (10, 10).
- c. Nick prefers (10, 17) to (10, 10).
- d. Nick prefers (8, 8) to (17, 21).
- e. More than one of the above statements are true.

ANS: D

4. Ambrose has indifference curves with the equation $x_2 = \text{constant} - 4x_1^{1/2}$, where larger constants correspond to higher indifference curves. If good 1 is drawn on the horizontal axis and good 2 on the vertical axis, what is the slope of Ambrose's indifference curve when his consumption bundle is (16, 17)?

- a. $-16/17$
- b. $-17/16$
- c. -0.50
- d. -21
- e. -4

ANS: C

5. Charlie has the utility function $U(x_A, x_B) = x_A x_B$. His indifference curve passing through 35 apples and 18 bananas will also pass through the point where he consumes 5 apples and

- a. 131 bananas.
- b. 137 bananas.
- c. 21 bananas.
- d. 42 bananas.
- e. 126 bananas.

ANS: E

6. Harry has \$10 to spend on cans of Coke and Pepsi, which he regards as perfect substitutes, one for one. Pepsi costs \$.50 a can and Coke costs \$.60 a can. Harry has 20 coupons, each of which can be used to buy 1 can of Coke for \$.40. Which of the following bundles will Harry buy?

- a. 20 cans of Pepsi and no Coke
- b. $16\frac{2}{3}$ cans of Coke and no Pepsi
- c. 10 cans of Coke and 8 cans of Pepsi
- d. 10 cans of Coke and 12 cans of Pepsi
- e. None of the above.

ANS: E

7. Janet consumes x_1 and x_2 together in fixed proportions. She always consumes 2 units of x_1 for every unit x_2 . One utility function that describes her preferences is

- a. $U(x_1, x_2) = 2x_1x_2$.
- b. $U(x_1, x_2) = 2x_1 + x_2$.
- c. $U(x_1, x_2) = x_1 + 2x_2$.
- d. $U(x_1, x_2) = \min\{2x_1, x_2\}$.
- e. $U(x_1, x_2) = \min\{x_1, 2x_2\}$.

ANS: E

8. Preferences are said to be monotonic if

- a. all goods must be consumed in fixed proportions.
- b. all goods are perfect substitutes.
- c. more is always preferred to less.
- d. there is a diminishing marginal rate of substitution.
- e. None of the above.

ANS: C

9. Regardless of his income and regardless of prices, Smedley always spends 25% of his income on housing, 10% on clothing, 30% on food, 15% on transportation, and 20% on recreation. This behavior is consistent with which of the following?

- a. All goods are perfect substitutes.
- b. Smedley's demands for commodities do not change when their prices change.
- c. Smedley consumes all goods in fixed proportions.
- d. Smedley has a Cobb-Douglas utility function.
- e. More than one of the above.

ANS: D

10. At prices (\$4, \$12), Harry chooses the bundle (9, 4). At the prices (\$8, \$4), Harry chooses the bundle (2, 9). Is this behavior consistent with the weak axiom of revealed preference?

- a. Yes.
- b. No.
- c. It depends on his income.
- d. We would have to observe a third choice to be able to say.
- e. None of the above.

ANS: A

11. Cindy consumes goods x and y . Her demand for x is given by $x(p_x, m) = 0.05m - 5.15p_x$. Now her income is \$419, the price of x is \$3, and the price of y is \$1. If the price of x rises to \$4 and if we denote the income effect on her demand for x by DI and the substitution effect on her demand for x by DS , then

- a. $DI = -0.28$ and $DS = -0.52$.
- b. $DI = -0.28$ and $DS = -4.88$.
- c. $DI = -0.52$ and $DS = -0.52$.
- d. $DI = 0$ and $DS = -2.00$.
- e. None of the above.

ANS: B

12. The following can be said about the income and substitution effects of a price increase on the demand for a good whose price rose:

- a. The former is always positive and the latter is always negative.
- b. Both can be either positive or negative.
- c. While the latter is always negative, the former can be either positive or negative.
- d. While the former is always negative, the latter can be either positive or negative.
- e. The former can at times be negative, but it will never overwhelm the latter.

ANS: C

13. Billy Pigskin from your workbook has a von Neumann-Morgenstern utility function $U(c) = c^{1/2}$. If Billy is not injured this season, he will receive an income of \$16 million. If he is injured, his income will be only \$10,000. The probability that he will be injured is .1 and the probability that he will not be injured is .9. His expected utility is

- a. 3,610.
- b. between 15 million and 16 million.
- c. 100,000.
- d. 7,220.
- e. 14,440.

ANS: A

14. Ella's utility function is $\min\{5x, y\}$. If the price of x is \$20 and the price of y is \$20, how much money would she need to be able to purchase a bundle that she likes as well as the bundle $(x, y) = (7, 15)$?

- a. \$440
- b. \$360
- c. \$177
- d. \$372
- e. \$72

ANS: B

15. Lolita, the Holstein cow, has a utility function is $U(x, y) = x - x^2/2 + y$, where x is her consumption of cow feed and y is her consumption of hay. If the price of cow feed is \$.30, the price of hay is \$1, and her income is \$4, and if Lolita chooses the combination of hay and cow feed that she likes best from among those combinations she can afford, her utility will be

- a. 4.25.
- b. 3.70.
- c. 0.25.
- d. 6.25.
- e. 2.25.

ANS: A

16. A peck is $1/4$ of a bushel. If the price elasticity of demand for peas is -0.10 when peas are measured in bushels, then when peas are measured in pecks, the price elasticity of demand for peas will be

- a. -0.10 .
- b. -0.40 .
- c. -0.03 .
- d. -0.20 .
- e. none of the above.

ANS: A

17. The demand function is described by the equation $q(p) = 130 - p/5$. The inverse demand function is described by the equation

- a. $p(q) = 650 - 5q$.
- b. $p(q) = 1/130 - q/5$.
- c. $q(p) = 130 - 5p$.
- d. $q(p) = 1/(130 - p/5)$.
- e. $p(q) = 130 - q/5$.

ANS: A

18. The inverse demand function for eggs is $p = 84 - 9q$, where q is the number of cases of eggs. The inverse supply is $p = 7 + 2q$. In the past, eggs were not taxed, but now a tax of 33 dollars per case has been introduced. What is the effect of the tax on the quantity of eggs supplied?

- a. Quantity drops by 2 cases.
- b. Quantity drops by 3 cases.
- c. Quantity drops by 6 cases.
- d. Quantity drops by 4 cases.
- e. None of the above.

ANS: B

19. A firm has the production function $f(x, y) = 60x^{4/5}y^{1/5}$. The slope of the firm's isoquant at the point $(x, y) = (40, 80)$ is (pick the closest one)

- a. -0.50 .
- b. -4 .
- c. -0.25 .
- d. -8 .
- e. -0.25 .

ANS: D

20. If output is produced with two factors of production and with increasing returns to scale,

- a. there cannot be diminishing marginal rate of substitution.
- b. all inputs must have increasing marginal products.
- c. on a graph of production isoquants, moving along a ray from the origin, output more than doubles as the distance from the origin doubles.
- d. the marginal product of at least one input must be increasing.
- e. all inputs must have decreasing marginal products.

ANS: C

21. A profit-maximizing competitive firm uses just one input, x . Its production function is $q = 4x^{1/2}$. The price of output is \$12 and the factor price is \$3. The amount of the factor that the firm demands is
- 64.
 - 16.
 - 60.
 - 8.
 - None of the above.

ANS: A

22. A firm has fixed costs of \$2,000. Its short-run production function is $y = 4x^{1/2}$, where x is the amount of variable factor it uses. The price of the variable factor is \$3,000 per unit. Where y is the amount of output, the short-run total cost function is
- $5,000y$.
 - $2,000 + 3,000y$.
 - $2,000/y + 3,000$.
 - $2,000 + 187.50y^2$.
 - $2,000y + 0.19y^2$.

ANS: D

23. A new metal alloy is discovered that uses copper and zinc in fixed proportions where each unit of the alloy requires 4 units of zinc and 2 units of copper. If no other inputs are required, if the price of zinc is \$2 per unit, and the price of copper is \$5 per unit and if total output is 4,000 units, what is the average cost per unit of output?
- \$.50
 - \$2
 - \$18
 - \$20
 - \$25

ANS: C

24. The marginal cost curve of a firm is $MC = 6y$. Total variable costs to produce 10 units of output are
- \$120.
 - \$300.
 - \$80.
 - \$400.
 - \$26.

ANS: B

25. A firm has a short-run cost function $c(y) = 3y + 14$ for $y > 0$ and $c(0) = 10$. The firm's quasi-fixed costs are
- \$10.
 - \$4.
 - \$9.
 - \$14.
 - They are not possible to determine from this information.

ANS: B

26. Rex Carr could pay \$10 for a shovel that lasts one year and pay \$5 a car to his brother Scoop to bury the cars, or he could buy a low-quality car smasher that costs \$200 a year to own and that smashes cars at a marginal cost of \$1 per car. If it were also possible for Rex to buy a high-quality hydraulic car smasher that cost \$650 per year to own and if with this smasher he could dispose of cars at a cost of \$.67 per car, it would be worthwhile for him to buy this high-quality smasher if he needed to dispose of

- a. at least 1,350 cars per year.
- b. no more than 675 cars per year.
- c. at least 1,360 cars per year.
- d. no more than 1,350 cars per year.
- e. at least 675 cars per year.

ANS: A

27. A profit-maximizing firm continues to operate even though it is losing money. It sells its product at a price of \$100.

- a. Average total cost is less than \$100.
- b. Average fixed cost is less than \$100.
- c. Marginal cost is increasing.
- d. Average variable cost is less than \$100.
- e. Marginal cost is decreasing.

ANS: D

28. In East Icicle, Minnesota, on the northern edge of the corn belt, the growing season is short and the soil is poor. Corn yields are meager unless a great deal of expensive fertilizer is used. In Corncrib, Illinois, the land is fertile and flat and the growing season is 20 days longer. For any given expenditure per acre, corn yields are far greater than in East Icicle. Farmers in both places are profit maximizers who grow corn.

- a. Marginal costs are higher in East Icicle than in Corncrib.
- b. More fertilizer is used per acre in East Icicle than in Corncrib.
- c. Marginal costs are the same in both places.
- d. More fertilizer is used per acre in Corncrib than in East Icicle.
- e. More than one of the above is true.

ANS: C

29. Consider a competitive industry with several firms all of which have the same cost function, $c(y) = y^2 + 4$ for $y > 0$ and $c(0) = 0$. The demand curve for this industry is $D(p) = 50 - 2p$, where p is the price. The long-run equilibrium number of firms in this industry is

- a. 4.
- b. 23.
- c. 25.
- d. 46.
- e. 2.

ANS: B

30. A profit-maximizing monopolist faces the demand curve $q = 100 - 3p$. It produces at a constant marginal cost of \$20 per unit. A quantity tax of \$10 per unit is imposed on the monopolist's product. The price of the monopolist's product

- a. rises by \$5.
- b. rises by \$10.
- c. rises by \$20.
- d. rises by \$12.

e. stays constant.

ANS: A

31. A monopolist sells in two markets. The demand curve for her product is given by $p_1 = 122 - 2x_1$ in the first market and $p_2 = 306 - 5x_2$ in the second market, where x_i is the quantity sold in market i and p_i is the price charged in market i . She has a constant marginal cost of production, $c = 6$, and no fixed costs. She can charge different prices in the two markets. What is the profit-maximizing combination of quantities for this monopolist?

- a. $x_1 = 58$ and $x_2 = 32$.
- b. $x_1 = 29$ and $x_2 = 30$.
- c. $x_1 = 59$ and $x_2 = 29$.
- d. $x_1 = 39$ and $x_2 = 28$.
- e. $x_1 = 49$ and $x_2 = 40$.

ANS: B

32. An industry has two firms. The inverse demand function for this industry is $p = 74 - 4q$. Both firms produce at a constant unit cost of \$26 per unit. What is the Cournot equilibrium price for this industry?

- a. \$21
- b. \$29
- c. \$42
- d. \$26
- e. None of the above.

ANS: C

32. There are two types of used cars, high quality and low quality. Buyers cannot distinguish the two types until after they have purchased them. Owners of high-quality cars will sell them if the price is \$2,000 or higher. Owners of low-quality cars will sell them if the price is \$1,000 or higher. Buyers value a high-quality used car at \$4,266 and a low-quality used car at \$1,200. Suppose that 30% of used cars are of high quality and 70% of used cars are of low quality. In equilibrium,

- a. only high-quality used cars will be sold.
- b. only low-quality used cars will be sold.
- c. all used cars will be sold.
- d. no used cars will be sold.
- e. high-quality used cars will sell for a uniformly higher price than low-quality used cars.

ANS: C

33. In the game matrix below, the first payoff in each pair goes to player A who chooses the row, and the second payoff goes to player B, who chooses the column. Let a , b , c , and d be positive constants.

		Player B	
		Left	Right
Player A	Top	a, 1	b, 1
	Bottom	1, c	1, d

If player A chooses Bottom and player B chooses Right in a Nash equilibrium, then we know that

- a. $b > 1$ and $d < 1$.
- b. $c < 1$ and $b < 1$.
- c. $b < 1$ and $c < d$.
- d. $b < c$ and $d < 1$.

e. $a < 1$ and $b < d$.

ANS: C