

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

Note that we gave everyone full credit for the cruise question about variable costs. It was not a great question.

I did not add comments to version 2. Takers of version 2 need to look through the comments on version 1. I did not want to write everything twice.

Some people do not adequately understand negative numbers and what they mean.

Surprisingly, at least to me, some people found the elasticity questions difficult. I thought most of them would be shoe-ins. Maybe the difficulty is due to my last point.

There was an issue with question 13 that I only thought about after the exams were graded. Given the problem with the question (explained below) we will add one point, out of 45, to everyone's test score. This grade change applies to both versions of the exam.

1. Justin is in college and has \$16 a day to spend on food. Given his allergies and intolerance to lactose, he can consume only pesto pizza without cheese and seaweed salad. The pizza cost \$2 a slice and the salad \$4 a bowl. Justin belongs to the Church of Skinny which allows one to consume no more than 800 calories per day. Justin is a devout member. Each slice of pizza has 200 calories and each bowl of seaweed has 100 calories. In addition, Justin's mother instructed him to waste no more than one hour a day eating, and Justin obeys his mother. It takes Justin 10 minutes to eat a slice of pizza and 15 minutes to knock back a bowl of seaweed salad. If Justin spends all of his \$16 on food, then, per day
  - A) Justin can consume a maximum of 6 slices of pizza
  - B) Justin can consume a maximum of 8 dishes of salad
  - C) Justin can consume a maximum of 3 slices of pizza
  - D) Justin can consume a maximum of 4 dishes of salad
  
2. Assume China and the U.S. currently have the same levels of pollution, but the U.S. is much richer in terms of goods. Which statement is more likely to be correct?
  - A) The marginal-rate-of-substitution of pollution reduction for goods in the U.S. is greater than the marginal-rate-of-substitution of pollution reduction for goods in China
  - B) The marginal-rate-of-substitution of pollution reduction for goods in China is greater than the marginal-rate-of-substitution of pollution reduction for goods in the U.S.
  - C) Willingness-to-pay for pollution reduction is higher in China

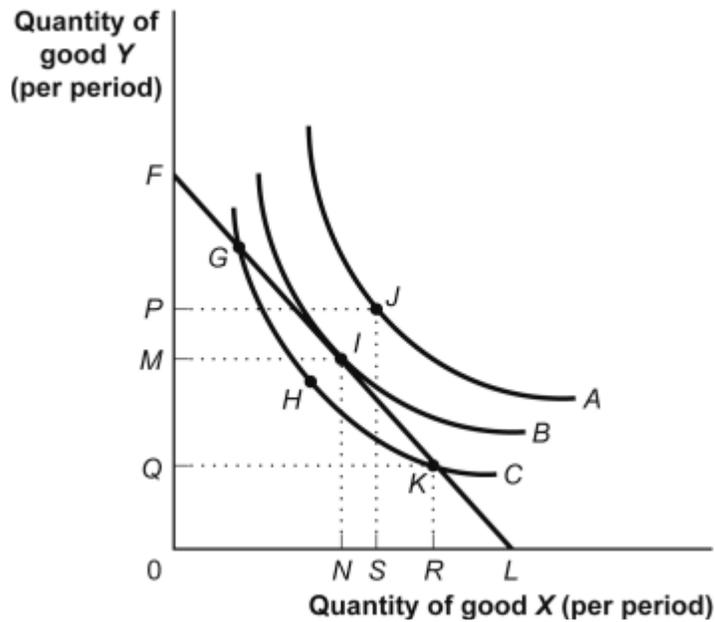
3. In the theory of the firm, we use "isoquants". Breaking down the term we have "quant" as in "quantity," and "iso" as in "one," meaning every point on an isoquant corresponds to the same quantity. The analogous concept in regards to consumer theory is\_\_\_\_\_.
- A) An Indifference curves
  - B) Preferences
  - C) Utility
  - D) A budget line
4. The slope of \_\_\_\_\_ shows the rate at which two goods can be exchanged \_\_\_\_\_ the consumer's \_\_\_\_\_.
- A) a budget line, without affecting, utility level.
  - B) an indifference curve; without affecting; utility level.
  - C) an indifference curve, without affecting, level of expenditures.
5. Which statement best describes how the competitive firm chooses the input combination it will use to produce, in the long run, its chosen level of output.
- A) It is determined by the state of technical knowledge for producing its output and the constraints imposed on the firm by the market.
  - B) It is determined by the isoquant map
  - C) It is determined by its chosen level of output
  - D) It is determined by the input prices
6. Scott operates a business that takes people on boat tours in Crystal River, Florida. The amount of fuel Scott uses each day is a variable input.
- A) True
  - B) False
7. Jim is a stalwart Republican; he works a steady job, has a wife and two kids, and lives in the suburbs. He dislikes Obamacare. Which of the following statements is definitely not correct?
- A) Jim's wta Obamacare is positive and maybe greater than his income.
  - B) For Jim, every state-of-the-world with Obamacare is preferred to every state without Obamacare.
  - C) Jim's wtp to eliminate Obamacare is positive but less than his income.

8. Since females in the US tend to marry at a younger age than males, women born during the early portion of the baby boom (starting 1945) entered the "marriage market" before their male counterparts creating a situation in the 1960's where there were more potential brides than grooms. The 1960's ushered in the Sexual Revolution. The "pill" became widely available and the frequency of pre-marital sex jumped drastically. Luckily, this was before the time of AIDS. Robert Frank, a noted economist, recently speculated in the New York Times that the increased competition for grooms caused by the baby boom might be responsible for some of the jump in the incidence of pre-marital sex that started in the 1960's.
- A) Frank's hypothesis seems to require the assumption that marriage-age females believe that having sex before marriage will increase the probability that they will get married, or at least believed this back then.
  - B) An alternative to Frank's hypothesis is that the jump in pre-marital sex was completely due to the pill becoming widely available.
  - C) All of the other four choices are reasonable.
  - D) This is an accurate description of Frank's hypothesis, whether it is correct is another matter.
  - E) Frank would likely say that the demand curve for grooms shifted to the right, supply curve constant, when the baby-boom females came of age.
9. Fred, the skier, just got a bunch of new non-skiing friends who want Fred to hang out with them watching, over and over, episodes of the TV show *Pretty Little Liars*. Fred likes *Pretty Little Liars*. This widening of her social circle will likely
- A) decrease the number of miles that she skis because it has caused her "wage rate" to increase
  - B) increase the number of miles that she skis because it has caused her "wage rate" to decrease.
  - C) have no effect on the number of miles she skis because it does not affect her "wage rate."
  - D) increase the number of miles that she skis because it has caused her "wage rate" to increase.
10. Karen consumes gasoline and other goods. A new excise tax on gasoline raises gas prices. However, the government pays Karen an income subsidy that is just enough for her to stay on her original (pre-tax) indifference curve. Her new optimal consumption bundle will have:
- A) less gas and more of other goods.
  - B) This question can't be answered, since some essential information (such as Karen's income, the pre- and post-tax prices of gas, etc.) is missing.
  - C) less of other goods and more gas.
  - D) the same amount of both goods as before.

11. Wanda spends her entire budget on warm soda (\$1 can) and cold pizza (\$2 slice). Currently she is getting 30 utils of utils from the last soda she is consuming, and 80 utils from the last slice of pizza she is consuming Wanda is consuming
- A) too little soda and too much pizza
  - B) too much soda and too little pizza
  - C) her utility maximizing combination of soda and pizza
12. In the Fred lectures, If Fred is being paid \$x a mile to ski, and currently it is costing her more than \$x to crank out her last mile, to increase her revenues she needs to ski more.
- A) True
  - B) False
13. If it produces, a perfectly competitive firm will maximize profits at the output level where
- A) marginal revenue equals marginal cost.
  - B) marginal revenue equals price.
  - C) price equals average total cost.
  - D) price exceeds marginal cost.
14. Which of the following best illustrates an "income effect" of a price increase?
- A) The price of bacon increases, so Michelle buys more sausage, a substitute for bacon.
  - B) The price of corn chips increases, so Michelle buys potato chips, a substitute for corn chips
  - C) The tuition at the public university increases, so Michelle attends a community college, a substitute for a public university
  - D) Michelle's apartment rent increases, so she cancels her subscription to a monthly magazine.

Use the following to answer question 15:

**Figure: Consumer Equilibrium**



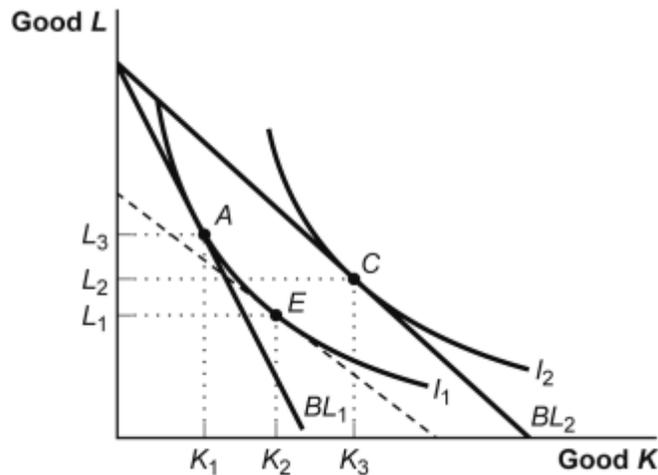
15. (Figure: Consumer Equilibrium) Assume the consumer is currently consuming at point *G*. Given the budget constraint shown, the consumer would be able to realize more total utility by choosing point \_\_\_\_\_, all other things held equal.
- A) *J*
  - B) *H*
  - C) *K*
  - D) *I*
16. Chuck spends all his income on two goods: tacos and milkshakes. His income is \$100, the price of tacos is \$10, and the price of milkshakes is \$2. Put tacos on the horizontal axis and milkshakes on the vertical axis. The opportunity cost of one taco equals \_\_\_\_\_ units of milkshakes.
- A) 5
  - B) 2
  - C) 10
  - D) 1/5

17. Utility is the:
- A) good not adequately provided by a free market and usually provided by the government.
  - B) lowest price that buyers are willing to pay for a given quantity of a good.
  - C) satisfaction consumers derive from their consumption of goods and services.
  - D) difference between a firm's total revenue and its total economic cost.
18. Fred is paid per mile skied. Her only cost is the value of her time. Her average total cost is calculated as total cost divided by miles skied.
- A) True
  - B) False
19. Suppose Alice consumes only wine and cheese. Alice's income increases, the price of wine decreases and the price of cheese decreases. Consider Alice's budget line with wine on the vertical axis and cheese on the horizontal axis. What will happen to the slope of Alice's budget line?
- A) It necessarily remains the same.
  - B) It becomes steeper.
  - C) It becomes flatter.
  - D) There is not enough information to tell.
20. Consider two commodities that are substitutes: skiing at Vail and skiing at Aspen. The Vail-price elasticity of demand for trips to Aspen is likely positive.
- A) True
  - B) False
21. When gas costs \$3/gallon I buy 25 gallons a week and drive 500 miles a week. When gas costs \$4/gallon I buy 15 gallons and drive 300 miles a week. Using, the mid-point method for calculating elasticities, which statement is both correct and most informative
- A) In this range, my demand for gas is price elastic, and my gas-price elasticity of miles driven is negative and inelastic.
  - B) An increase in the price of gas from \$3 a gallon to \$4 a gallon is a 33% increase
  - C) In this range, the demand for gas is price inelastic, and the gas-price elasticity of miles driven is negative and inelastic
  - D) In this range, the demand for gas is price elastic, and the gas-price elasticity of miles driven is negative and elastic

22. Zoe's Bakery operates in a perfectly competitive industry. Suppose that when the market price is \$5, the profit-maximizing output level of pastries is 150 units, with average total cost of \$4, and average variable cost of \$3. From this we know Zoe's marginal cost is \_\_\_\_\_, and her short-run profits are \_\_\_\_\_.
- A) \$5; \$150  
 B) \$1; \$300  
 C) \$5; \$300  
 D) \$1; \$150
23. The curve that shows the additional cost of each additional unit of output is called the:
- A) average cost curve.  
 B) marginal cost curve.  
 C) total cost curve.  
 D) marginal product curve.

Use the following to answer question 24:

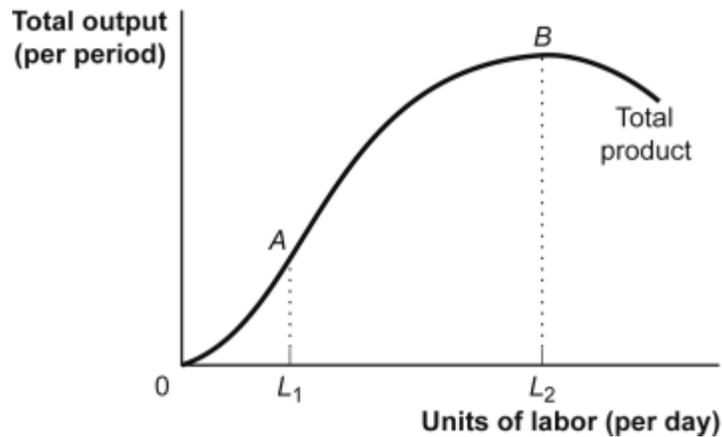
**Figure: Income and Substitution Effects**



24. (Figure: Income and Substitution Effects) The consumer is originally consuming his or her optimal consumption bundle at point A in the figure when the price of Good K falls. The dashed line tangent to  $I_1$  shows a hypothetical budget line reflecting:
- A) the new relative prices of K in terms of L and a change in income to keep the consumer on the original indifference curve.  
 B) the original income, original price of L, and the new price of K.  
 C) the income and substitution effects.  
 D) the new relative prices of K in terms of L and a change in income to allow the consumer to reach an indifference curve higher than  $I_1$ .

Use the following to answer question 25:

**Figure: Total Product**

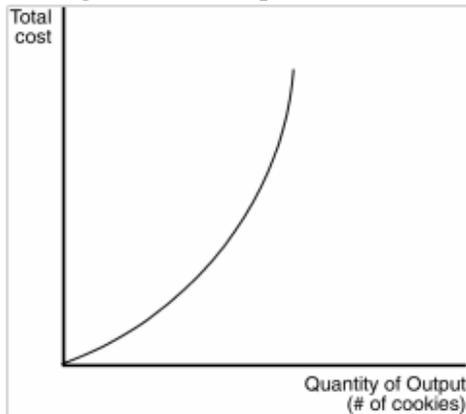


25. (Figure: Total Product) Between points *A* and *B* the marginal product of labor is:
- A) zero.
  - B) infinite.
  - C) falling.
  - D) increasing.
26. Consider two different indifference curves, the latter for a higher level of utility than the former. While not likely, it is possible that these two indifference curves intersect.
- A) True
  - B) False
27. In Xiodo China, a small rural community, China's one-child policy combined with a son preference has shifted the situation from 100 potential grooms and 100 potential brides to 100 potential grooms and 80 potential brides. This policy will increase, for potential grooms, the cost of getting married, and decrease the number of marriages (assuming Xiodo does not import potential brides or export potential grooms). This price increase and quantity decrease is caused by right-ward shift in the demand curve for brides.
- A) True
  - B) False

28. Suppose Alice consumes only wine and cheese. Alice's income increases, the price of wine increases and the price of cheese decreases. Consider Alice's budget line with wine on the vertical axis and cheese on the horizontal axis. What will happen to the slope of Alice's budget line?
- A) It becomes flatter.
  - B) It necessarily remains the same.
  - C) It becomes steeper.
  - D) There is not enough information to tell.
29. Consider a world with two commodities: beer and autographed photos of Lindsay Lohan. Rhonda love pictures of Lindsay (the more the better) but is indifferent to the amount of beer she drinks (Rhonda does not care whether she drinks a bottle, a case or a truckload). Consider Rhonda's indifference curves with beer on the vertical axis and pictures of Lindsay on the horizontal axis. Rhonda's indifference curves are vertical lines?
- A) True
  - B) False
30. Consider the statement, "The slope of an indifference curve (budget line) for goods A and B indicates the rate at which the individual (the market) substitutes good A for Good B." This statement is
- A) not enough information to determine whether it is true or false.
  - B) true
  - C) false
31. Consider a world with only two commodities: beer and bibles. For Wilma, bibles are a good but for Wilma beer starts off as a good but eventually turns into a bad. Consider Wilma's indifference curves with beer on the horizontal axis. Which statement is both correct and most informative?
- A) Her indifference curves are U-shaped (first the slope is negative but then switches to positive)
  - B) Her indifference curves are all downward sloping.
  - C) Her indifference curves are shaped like an inverted U (first the slope is positive but then switches to negative)
  - D) Her indifference curves are all upward sloping

32. Billy the bulldog has a \$30 coupon for Dogs'R'Us, a store that sells only two goods: puppy chow (\$5 per bag) and chew toys that look like economics professors (\$3 per toy). Billy can only use the coupon once and he must use his organic shopping bag to drag home whatever he buys. The bag can hold an unlimited number of chew toys, but at most three bags of chow. Billy will starve unless he buys at least one bag of chow. Which of the following bundles is in his choice set?
- A) 0 bags of food; 8 chew toys
  - B) 2 bag of food; 6 chew toys.
  - C) 3 bags of food; 6 chew toys
  - D) 4 bags of food; 2 chew toys
33. Let  $d$  denote Diet Cokes and  $c$  chocolate bars. At my current consumption level my  $MRS_{dc}=3$ . So, my wtp for an additional chocolate bar is  $1/3$  of a Diet Coke.
- A) True
  - B) False
34. The relationship between an individual's consumption bundle and his or her utility is called a:
- A) demand function.
  - B) consumption function.
  - C) utility function.
  - D) production function.
35. At my current consumption levels, My wtp for a Diet Coke in terms of chocolate bars is 3. Let  $d$  denote diet Cokes and  $c$  denote chocolate bars. Therefore my  $MRS_{dc}=3$  and the slope of my indifference curve at my current level of consumption is  $-3$ , with chocolate on the vertical axis and Diet Cokes on the horizontal axis.
- A) True
  - B) False
36. Consider two commodities that are complements: peanut butter and jelly. The jelly-price elasticity of demand for peanut butter is likely positive.
- A) True
  - B) False
37. Marginal cost is the change in:
- A) total cost resulting from a one-unit change in a variable input.
  - B) total cost resulting from a one-unit change in output.

38. The goal of a firm is to minimize its costs.
- A) True
  - B) False
39. Assume a linear downward sloping demand function. Suppose at a price of \$50 and a quantity of 1000, the price elasticity of demand is minus 1. Then
- A) the maximum value total revenue is \$50,000.
  - B) an increase in price from \$40 to \$42 will increase total revenue.
  - C) a decrease in price from \$51 to \$49 will leave total revenue unchanged.
  - D) All of the above are correct.
40. Consider two commodities A and B that are both bads, with A on the vertical axis and B on the horizontal axis. Higher indifference curves (curves further up and right) represent
- A) less utility than do lower indifference curves.
  - B) more utility than do lower indifference curves
  - C) the same amount of utility as lower curves.
  - D) either more or less utility than lower curves.
41. The figure below depicts a total cost function for a firm that produces cookies.



- Which of the statements below is most consistent with the shape of this total cost curve?
- A) The cost of producing each additional cookie is always declining.
  - B) The cost of producing each additional cookie eventually declines.
  - C) Each additional cookie costs the same to produce.
  - D) Producing an additional cookie is always more costly than producing the previous cookie.

42. Assume the demand curve for oil is downward sloping. OPEC lowers the price of oil and this leads to an increase in OPEC's revenues from the sale of its oil. The price elasticity of demand for oil is \_\_\_ and \_\_\_ .
- A) positive
  - B) negative, greater than 1
  - C) negative, less than -1
  - D) negative, greater than -1
43. Fabian wants to get exactly 70% on the final. Fabian produces the exam score using two inputs: hours of study time and milligrams of a drug that helps him to concentrate. Which of the following statements is both necessarily correct and most informative
- A) Fabian will get a 70% score on the exam
  - B) His isoquant for producing a 70% result identifies all those combinations of study hours and milligrams of drugs that will just get him a score of 70%.
  - C) His isoquant for producing a 70% result is the rate at which he can substitute study hours for milligrams of drugs in the production of the 70% score
  - D) His isoquant for producing the 70% score identifies all the different ways he would like to achieve a 70% score.
44. Consider the probability of being infected with AIDs, and the frequency one has unprotected sex with a stranger. While you would never have unprotected sex with a stranger, you have a friend who told you he is going to increase his frequency of unprotected stranger-sex by 10%, and you are worried he might contract AIDs. Under which of the following four scenarios will you worry the least about him contracting AIDs
- A) The percentage change in the probability of him contracting AIDs divided by the percentage change in the frequency of his unprotected stranger-sex is between zero and negative one.
  - B) The percentage change in the probability of him contracting AIDS divided by the percentage change in the frequency of his unprotected stranger-sex is positive number between zero and one.
  - C) The percentage change in the probability of him contracting AIDs divided by the percentage change in the frequency of his unprotected stranger-sex is a number greater than one.
  - D) The percentage change in the probability of him contracting AIDs divided by the percentage change in the frequency of his unprotected stranger-sex is a number less than negative one.
45. In state-of-the-world B everyone has more market goods than in state-of-the-world A, so B is necessarily preferred by everyone.
- A) True
  - B) False



## Answer Key

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

45. B