Quiz #2 – Week 03/08/2009 to 03/14/2009

You have 25 minutes to answer the following 14 multiple choice questions. Record your answers in the bubble sheet. Your grade in this quiz will count for 1% of your total grade in this course.

1. Indifference curves are convex, or bowed toward the origin, because

a. each indifference curve represents a constant, but different level of utility.

b. of diminishing marginal utility: the consumption of an additional unit of a good generates a smaller increase in total utility than the previous unit consumed.

c. they are not allowed to intersect one another.

d. they are downward sloping.

2. Suppose that Bob gets 40 units of utility when he consumes 2 hot dogs and 3 sodas and he gets 40 units of utility when he consumes 3 hot dogs and 1 soda. Then,

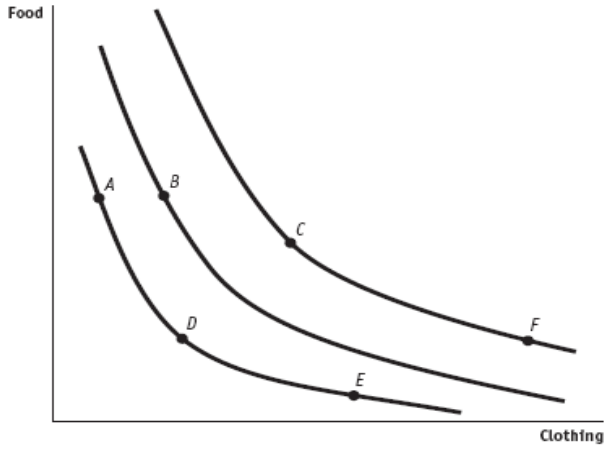
a. Bob must like hot dogs more than soda.

b. Bob must like soda more than hot dogs.

c. these two combinations of hot dogs and soda must lie on the same indifference curve.

d. these two combinations of hot dogs and soda must lie on the same budget line.

Use the figure below to answer the following two questions. The figure provides an indifference curve map for an individual with respect to food and clothing.



3. This consumer's marginal rate of substitution has the greatest absolute value at consumption bundle

a. *A*.

b. *C*.

c. *D*.

d. *E*.

e. *F*.

4. Moving along the indifference curve from point *A* to point *D*, the marginal rate of substitution of good X for good Y

a. increases.

b. decreases.

c. remains the same.

5. Normal indifference curves slope downward because

a. each consumption bundle must correspond to a unique total utility level.

b. more is better than less: if the consumer is giving up units of good Y, the consumer must be compensated with more of good X to maintain the same level of utility.

c. of diminishing marginal utility.

Answer the following three questions based on the table below, which provides information about an individual's tastes and preferences for food and clothing. Assume that each consumption bundle in the table provides the same level of utility for this individual.

Consumption bundle	Quantity of food (measured in meals)	Quantity of clothing (measured as items of clothing)
A	20	1
B	14	2
C	11	3
D	9	4
E	8	5

6. Suppose this individual initially consumes 2 items of clothing. This individual is willing

to give up_____ meals to consume an additional unit of clothing.

a. 1

b. 6

c. 3

d. 2

e. The answer depends on where the individual is on his indifference curve.

7. Suppose this individual's indifference curve based on the above information is drawn with clothing on the *x*-axis and meals on the *y*-axis. Then, as you move downward along this individual's indifference curve, the slope of the indifference curve

a. gets steeper due to diminishing marginal utility.

b. gets flatter due to diminishing marginal utility.

c. stays constant, since the level of utility along the indifference curve is held constant.

d. may get flatter, steeper, or stay constant depending on the individual's tastes and preferences.

Answer the next two questions based on the following information. Joe's income each month is $500 and Joe purchases only two types of goods: food and clothing. Each unit of food (*F*) costs $10 per unit and each unit of clothing (*C*) costs $20 per unit.

8. Which of the following equations expresses Joe's budget line?

a. $\$500 = \$10/F + \$20/C$

b. $F = 50 - 2C$

c. $F = 500 - 2C$

d. $C = 25 - (1/2)F$

e. Answers (b) and (d) are both correct.

9. Suppose Joe's income doubles and the price of food increases to $20 per unit and the price of clothing increases to $40 per unit. This causes

a. Joe's budget line to shift out from the origin since Joe's income has increased.

b. the slope of Joe's budget line to get steeper if clothing is measured along the *x*-axis, since clothing has gotten relatively more expensive.

c. the slope of Joe's budget line to get flatter if food is measured along the *x*-axis, since the price of food went up by a smaller dollar amount than the price of clothing.

d. no change in Joe's budget line from its initial position.

e. Answers (b) and (c) are both correct.

10. The vertical intercept of the individual's budget line is equal to

a. the price of the good measured on the vertical axis divided by the individual's income.

b. the price of the good measured on the horizontal axis divided by the individual's income.

c. the individual's income divided by the price of the good measured on the vertical axis.

d. the individual's income divided by the price of the good measured on the horizontal axis.

11. The slope of the indifference curve at any point on the indifference curve is equal to the negative of the

a. price of the good measured on the vertical axis divided by the price of the good measured on the horizontal axis.

b. price of the good measured on the horizontal axis divided by the price of the good measured on the vertical axis.

c. marginal utility of the good measured on the vertical axis divided by the marginal utility of the good measured on the horizontal axis.

d. marginal utility of the good measured on the horizontal axis divided by the marginal utility of the good measured on the vertical axis.

12. At the optimal consumption point for a consumer,

a. the ratio of the prices of the two goods is equal to the ratio of the marginal utilities of the two goods.

b. the marginal rate of substitution is a positive number that is greater than the ratio of the prices of the two goods.

c. the marginal rate of substitution is a negative number whose absolute value is greater than the ratio of the prices of the two goods.

d. the marginal rate of substitution may be equal to, greater than, or less than the price ratios of the two goods.

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Answer Key

1. Answer b. Although each answer describes a property of indifference curves for ordinary goods, it is diminishing marginal utility that drives the bowed shape of the indifference curve. As consumers consume additional units of one of the goods depicted, they find their utility from the good declining. To maintain the same level of satisfaction, they must give up smaller and smaller amounts of the other good for each additional unit of the good they are consuming.

2. Answer c. Since Bob gets the same amount of total utility from these two combinations of the hot dogs and soda, they must lie on the same indifference curve. We cannot know whether Bob prefers hot dogs or sodas.

3. Answer a. The marginal rate of substitution is the slope of the indifference curve at a particular point and is given by the slope of the line that is drawn tangent to the indifference curve at that point. If you draw this tangent line for each of the mentioned points, you will find that the line drawn tangent to point A is the steepest line, and therefore the absolute value of the slope of this line is greater than the absolute value of the slope of any of the other lines drawn tangent to the other points.

4. Answer b. As this consumer moves downward along the indifference curve from point A to point D, this individual gives up fewer units of food to get each additional unit of clothing, therefore the marginal rate of substitution decreases as the individual moves from point A to point D.

5. Answer b. Normal indifference curves slope downward because individuals must be compensated by getting more units of good X when they give up units of good Y. Answer (c) explains why normal indifference curves are convex, or bowed toward the origin.

6. Answer c. The individual is initially consuming consumption bundle B, which contains 2 items of clothing and 14 meals. The individual is willing to give up 3 meals to consume an additional unit of clothing (consumption bundle C).

7. Answer b. If you graph this individual's consumption bundles from the above information and then connect these bundles to create an indifference curve (remember that each of these bundles yields the same level of utility for the individual and therefore each bundle is on the same indifference curve), the indifference curve's slope gets flatter as you move downward along the curve. From the table we can see that the individual gives up fewer and fewer units of meals as the level of clothing consumed by the individual increases.

8. Answer e. Joe's budget line can be expressed as $500 = 10F + 20C$, since he has $500 he can spend on food and clothing and each unit of food costs $10 and each unit of

clothing costs $20. This equation can be rearranged and simplified to either the equation given in (b) or the equation given in (d).

9. Answer d. Joe's budget line does not change since both Joe's income and the prices of both goods have doubled. Joe's initial budget line could be written as 500 = 10F + 20C, and his new budget line is 1,000 = 20F + 40C. If you divide this new budget line by 2 on both sides of the equation, you get the original budget line, or you could try graphing both of these budget lines to see if they are the same line.

10. Answer c. The vertical intercept of the individual's budget line identifies the total number of units of that good that the individual can afford, given their income and the price of the good. To find how many units of the good the individual can afford if he uses all of his income to purchase the good measured on the y-axis, simply divide the individual's income by the price of the good measured on the y axis.

11. Answer d. To answer this question, it is helpful to return to the general equation for the individual's budget line:

$$\text{Income} = P_X X + P_Y Y$$

Then solve for Y to write the equation in slope intercept form. Solving for Y, this equation can be written as

$$Y = (\text{income}/P_Y) - (P_X/P_Y)X.$$

The slope of the budget line is therefore the negative of the price of the good measured on the x-axis divided by the price of the good measured on the y-axis.

12. Answer a. When the consumer selects the utility-maximizing consumption bundle, she selects a bundle that lies on the highest indifference curve she can afford given her income and the prices of the two goods. This consumption bundle sits on the indifference curve that is just tangent to the budget line at that point: thus, the marginal rate of substitution (the slope of the indifference curve) is equal to the negative of the price of the good measured on the horizontal axis divided by the price of the good measured on the vertical axis (the slope of the budget line).