CHAPTER 4:
Utility Maximization and Choice

4.1 "If an individual is to maximize the utility received from consumption, he or she should spend all available income. . . ." This statement assumes

a. that saving is impossible.

b. that the individual is not satiated in any one goods.

c. that no goods are "inferior."

d. that every good has a positive marginal utility.

ANSWER: a

4.2 Suppose an individual's *MRS* (of steak for beer) is 2:1. That is, at the current consumption choices he or she is willing to give up 2 beers to get an extra steak. Suppose also that the price of a steak is $1 and a beer is 254. Then in order to increase utility the individual should

a. buy more steak and less beer.

b. buy more beer and less steak.

c. continue with current consumption plans.

ANSWER: b

4.3 Suppose that at current consumption levels an individual's marginal utility of consuming an extra hot dog is 10 whereas the marginal utility of consuming an extra soft drink is 2. Then the *MRS* (of soft drinks for hot dogs) -- that is, the number of hot dogs the individual is willing to give up to get one more soft drink—is

a. 5.

b. 2.

c. 1/2.

d. 1/5.

ANSWER: d

4.4 If an individual's indifference curve map does not obey the assumption of a diminishing *MRS*, then

a. the individual will not maximize utility.

b. the individual will buy none of good *x*.

c. tangencies of indifference curves to the budget constraint may not be points of utility maximization.

d. the budget constraint cannot be tangent to an appropriate indifference curve.

ANSWER: c

4.5 An increase in an individual's income without changing relative prices will

a. rotate the budget constraint about the X-axis.

b. shift the indifference curves outward.

c. shift the budget constraint outward in a parallel way.

d. rotate the budget constraint about the Y- axis.

ANSWER: c

4.6 The slope of the budget constraint line is

a. the ratio of the prices (p_x/p_y).

b. the negative of the ratio of the prices (p_x/p_y).

c. the ratio of income divided by price of *y* (I/p_y).

d. none of the above.

ANSWER: b

4.7 If the price of x falls, the budget constraint

a. shifts outward in a parallel fashion.

b. shifts inward in a parallel fashion.

c. rotates outward about the x-intercept.

d. rotates outward about the y-intercept.

ANSWER: d

4.8 Suppose that an individual has a constant *MRS* of shoes for sneakers of : (that is, he or she is always willing to give up 3 pairs of sneakers to get 4 pairs of shoes). Then, if sneakers and shoes are equally costly, he or she will

a. buy only sneakers.

b. buy only shoes.

c. spend his or her income equally on sneakers and shoes.

d. wear sneakers only 3/4 of the time.

ANSWER: a

4.9 If an individual's utility function is given by $U(x, y) = \sqrt{xy}$ and $I = 100$, $p_x = 1$, $p_y = 4$, his or her preferred consumption bundle will be:

a. (20, 20).

b. (50, 12.5).

c. (40, 15).

d. (30, 15).

ANSWER: b

4.10 If utility is given by $U(x, y) = x^2 + y^2$ and $p_x = 2$, $p_y = 3$, $I = 50$, this person will choose

a. (10, 10).

b. (15, 6.67).

c. (25, 0).

d. (0, 50/3).

ANSWER: c

4.11 If an individual's utility function for coffee (x) and cream (y) is given by $U(x, y) = \min(x, 5y)$, the demand function for coffee is given by

a. $x = I/2p_x$.

b. $x = I/(p_x + p_y)$.

c. $x = I/(p_x + 0.2p_y)$.

d. $x = I/(p_x + p_y)^2$.

ANSWER: c

4.12 Suppose utility is given by $U(x, y) = \ln x + \ln y$ and $p_x = 1$, $I = 10$. If y must be purchased in whole units, what is the maximum price this person would pay for that good?

a. 1.

b. 5.

c. 10.

d. 20.

ANSWER: b

4.13 An individual has a utility function for tennis rackets (x) and tennis balls (y) of the form $U(x, y) = \min(3x, y)$. His or her expenditure function is given by

a. $E = \left(\frac{p_x}{3} + p_y \right) U$.

b. $E = (p_x + 3p_y) U$.

c. $E = \left(p_x + \frac{p_y}{3} \right) U$.

d. $E = \frac{(p_x + p_y) U}{3}$.

ANSWER: a