ECON 360 HOMEWORK 3

TRUE OF FALSE

1. A point of tangency between her indifference curve and her bud get line must be an optimal consumption point.

ANS: F

2. If preferences are quasilinear, then for very high incomes the income offer curve is a straight line parallel to one of the axes.

ANS: T

3. Prudence was maximizing her utility subject to her bud get constraint. Then prices changed. After the price change she was better off. Therefore the new bundle costs more at the old prices than the old bundle did.

ANS: T

4. Donald's utility function is $U(x, y) = x + y1/2$. Currently he is buying some of both goods. If his income rises and prices don't change, he will buy more of both goods.

ANS: F

5. When other variables are held fi xed, the demand for a Giffen good rises when income increases.

ANS: F

MULTIPLE CHOICE

1. 37. Elmer's utility function is $U(x, y) = \min\{x, 2y\}$. If the price of x is \$10 and the price of y is \$15 and if Elmer chooses to consume 4 units of y, what must his income be?
   a. \$120
   b. \$100
   c. \$160
   d. \$140
   e. There is not enough information to determine his income.

   ANS: d

2. 20. Katie Kwasi's utility function is $U(x_1, x_2) = 5(\ln x_1) + x_2$. Given her current income and the current relative prices, she consumes 10 units of x_1 and 15 units of x_2. If

her income doubles, while prices stay constant, how many units of x_1 will she consume after the change in income?

a. 15

b. 10

c. 5

d. 20

e. There is not enough information to determine how many.

ANS: B

3. 25. Which of the following utility functions represent preferences of a consumer who does not have homothetic preferences?

   a. $U(x, y) = xy$.

   b. $U(x, y) = x + y^5$.

   c. $U(x, y) = x + 2y$.

   d. $U(x, y) = \min\{x, y\}$.

   e. More than one of the above.

   ANS: B

4. 21. Will Feckless unexpectedly inherits $10,000 from a rich uncle. He is observed to consume fewer hamburgers than he used to.

   a. Hamburgers are a Giffen good for Will.

   b. Hamburgers are a normal good for Will.

   c. Will's Engel curve for hamburgers is vertical.

   d. Will's Engel curve for hamburgers is horizontal.

   e. Will's preferences are not homothetic.

   ANS: E

PROBLEMS

1. Max has the utility function $U(x, y) = x^2y^2$. The price of x is $2 and the price of y is $1. Income is $10. How much x does Max demand? How much y? If his income doubles and prices stay unchanged, will Max's demand for both goods double? Draw Max's Engel curves for both goods. Show the detailed process of getting your answer.

ANS: x=2.5; y=5; Yes;

2. Max has the utility function $U(x, y)$ =2x+y. The price of x is \$2 and the price of y is \$3. Income is \$10. How much x does Max demand? How much y? If his income doubles and prices stay unchanged, will Max's demand for both goods double? If the price of y increases to \$4, How much x does Max demand? How much y?

ANS: x=5, y=0 for the both cases

Yes.

3. If the consumer is consuming exactly two goods, and she is always spending all of her money, can both of them be inferior goods? Why?

ANS: No. If both of them are inferior, as income increases, the demand will decrease. It's impossible to exhaust income after income increase.