## PROBLEM FROM THE LAST QUIZ

**6.13** (1) Here is a puzzle for you. At first glance, it would appear that there is not nearly enough information to answer this question. But when you graph the indifference curve and think about it a little, you will see that there is a neat, easily calculated solution.

Kinko spends all his money on whips and leather jackets. Kinko's utility function is  $U(x, y) = \min\{4x, 2x + y\}$ , where x is his consumption of whips and y is his consumption of leather jackets. Kinko is consuming 15 whips and 10 leather jackets. The price of whips is \$10. You are to find Kinko's income.

(a) Graph the indifference curve for Kinko that passes through the point

(15, 10). What is the slope of this indifference curve at (15, 10)?

\_\_\_\_ What must be the price of leather jackets if Kinko chooses this

point?\_\_\_\_\_ Now, what is Kinko's income?\_\_\_\_\_

Leather jackets



#### SLUTSKY EQUATION WITH ENDOWMENT

$$\frac{dx_1(p_1, m(p_1))}{dp_1} = \frac{\partial x_1^s(p_1)}{\partial p_1} + \frac{\partial x(p_1, m)}{\partial m}(\omega_1 - x_1)$$

2) If a rational utility maximizer is a net demander of a good and if an increase in its price causes him to buy more of it, then it must be an inferior good.

3) If a person is a net supplier of a normal good and its price increases while all other prices stay the same, then his demand for the good must decrease.

4) Wilhelm consumes only apples and bananas. His endowment is 5 units of apples and 10 units of bananas. Both goods are normal goods for Wilhelm. At current prices, Wilhelm is a net seller of apples. If the price of apples rises and the price of bananas stays the same, his demand for apples must decrease.

5) If a person has no non-labor income, a decrease in wages causes the budget line between leisure and other goods to shift downward in a parallel fashion.

#### **CONSUMER SURPLUS**

6) Suppose that a consumer has a utility function  $u(x_1; x_2) = x_1 + x_2$ . Initially the consumer faces prices (1; 2) and has income 10. If the prices change to (4; 2), calculate the compensating and equivalent variations.

## Comment: you can find solution to this problem in workouts to the Varian's textbook.

7) Suppose that the inverse demand curve is given by P(q) = 100 - 10q and that the consumer currently has 5 units of the good. How much money would you have to pay him to compensate him for reducing his consumption of the good to zero?

Suppose now that the consumer is purchasing the 5 units at a price of \$50 per unit. If you require him to reduce his purchases to zero, how much money would be necessary to compensate him?

# Comment: you can find solution to this problem in workouts to the Varian's textbook.

14.3 (0) Quasimodo consumes earplugs and other things. His utility function for earplugs x and money to spend on other goods y is given by

$$u(x,y) = 100x - \frac{x^2}{2} + y.$$

Assume that Quasimodo has income of 4 000 \$. What is the change in (net) consumer's surplus when the price of earplugs changes from \$50 to \$80?

14.5 (2) Bernice's preferences can be represented by  $u(x, y) = \min\{x, y\}$ , where x is pairs of earrings and y is dollars to spend on other things. She faces prices  $(p_x, p_y) = (2, 1)$  and her income is 12.

If the prices change to (3; 1), calculate the compensating and equivalent variations.

# **Ex 8**

Suppose that a consumer has a utility function  $u(x_1, x_2) = x_1^{\frac{1}{2}} x_2^{\frac{1}{2}}$ . He originally faces prices (1, 1) and has income 100. Then the price of good 1 increases to 2. What are the compensating and equivalent variations?

## Comment: you can find solution to this problem in the Varian's textbook.

**14.8 (2)** F. Flintstone has quasilinear preferences and his inverse demand function for Brontosaurus Burgers is P(b) = 30 - 2b. Mr. Flintstone is currently consuming 10 burgers at a price of 10 dollars. *(a)* How much money would he be willing to pay to have this amount rather than no burgers?

What is his level of (net) consumer's surplus?

(b) The town of Bedrock, the only supplier of Brontosaurus Burgers, decides to raise the price from \$10 a burger to \$14 a burger. What is Mr. Flintstone's change in consumer's surplus?