

Due: Wednesday, February 16

1. Raoul lives in an island paradise that is ruled by his brother, the Supreme Commander. Raoul is allocated 2 pounds of meat and 10 pounds of rice each month. Raoul's preferences tend towards vegetarianism, and so at his initial endowment his marginal willingness to trade rice for meat is 1 pound of rice for 1 pound of meat. Raoul is atypical, however, so in the marketplace the going rate of barter is 5 pounds of rice for 1 pound of meat. Illustrate Raoul's budget constraint. Then sketch several of Raoul's indifference curves, especially the one that passes through his initial endowment, and explain what sort of trading Raoul is likely to engage in with others.
2. Homer finally gets fired from his job once and for all. His spirit broken, he sits around the house all day and does nothing. To provide the family with some income, Marge starts taking in and doing other people's laundry. As a result of her efforts, the household's income is \$500 per month. Under these conditions, the Simpson family chooses to consume 400 units of food ( $P_F = \$0.50$  per unit) and 300 units of other goods ( $P_{OG} = \$1$  per unit).
  - a) Illustrate the Simpsons' situation with a budget constraint and indifference curve diagram.
  - b) Suppose the Simpsons qualify for a food stamp program whereby they are given coupons that can be redeemed for 600 units of food per month, but cannot be used to purchase other goods. While they consider themselves better off, they would have preferred to be given the cash equivalent and be allowed to spend it as they wish. Illustrate their new situation in your diagram and explain.
3. When their monthly income is \$100 and the price of potatoes is \$2 per pound, the O'Brien household consumes 10 pounds per month along with 80 units of other goods. When their income increases to \$200, they still consume 10 pounds of potatoes per month. Sketch the O'Brien's income-consumption curve for potatoes, and then calculate the income elasticities of demand for potatoes and for other goods.
4. Larry is a poor college student who consumes two goods, bus transportation and other goods. Larry's weekly income is \$100 and the price of a bus trip is \$2. The price of other goods is of course \$1. At these prices, he purchases 20 bus rides per week. Larry can't wait until he graduates and gets a well-paying job, because he anticipates that he will ride buses a whole lot less often when he can afford alternative transportation.
  - a) Illustrate Larry's initial situation in a budget constraint-indifference curve diagram.
  - b) Suppose that the city increases property taxes and uses the money to subsidize the price of a bus ticket, so that price falls from \$2 to \$1. Larry's consumption of bus travel increases from 20 to 25 trips per week. Illustrate Larry's new consumption choice, being careful to show the income and substitution effects of this price change.
5. Larry is obviously better off as a result of the decline in the price of a bus ticket, as is evidenced by his ability to reach a higher indifference curve when price falls. Sketch Larry's demand curve for bus travel and then explain how you can use it to estimate the dollar value of the benefit to him of a price reduction from \$2 to \$1. [Hint: remember the concept of consumer's surplus.] What is your estimate?