

ECO 601
Fall 2003
Problem Set #3

Due: Friday, September 19

1. Nicholson 4.2(a). Illustrate your answer in a diagram.
2. Mick has \$100 of income per week available for recreational activities, including exercise, movies, restaurant meals, etc. Mick's health club charges a fee of \$4 per hour, and Mick chooses to use the facility for 10 hours per week.
 - a) Illustrate Mick's consumption choice in a diagram with health club usage on the horizontal axis and other recreational activities on the vertical axis. (Other recreational activities are measured in lumpy homogeneous units that are priced at \$1 each.)
 - b) Now Mick's health club institutes a new pricing policy. A fixed fee of \$30 per week is charged for access to the facilities, but then a rate of \$1 per hour is charged for each hour of utilization. Is Mick better off as a result of this change? Explain your answer using the diagram that you drew in (a).
3. Suppose utility is of the CES form and is given by $U(X,Y) = X^{-5} + Y^{-5}$. If income is \$200, the price of X is \$10, and the price of Y is \$2.50, what combination of X and Y will a utility-maximizing consumer choose? What will utility be? Illustrate in a diagram.
4. Mick meets Jerri at the health club and falls in love, and they marry and have kids, hoping to live happily ever after. Mick and Jerri's household income is still \$100 per month, and now let's imagine that they consume a composite good, AOG, and health care, HC. The per unit price of AOG is \$1, and the per unit price of HC is \$5. Under these conditions they consume 9 units of HC each month.
 - a) Illustrate this initial situation with an indifference curve and budget constraint in the diagram below.
 - b) Now Parliament passes a health care act that subsidizes the purchase of health care by low-income households. The subsidy lowers the price to qualifying households from \$5 to \$3, with government paying the other \$2 per unit consumed. Mick and Jerri increase their consumption to 15 units of HC per month. Illustrate with a new indifference curve and budget constraint.
 - c) How much will this program cost taxpayers to assist a family like Mick and Jerri? Show how that dollar amount can be represented in your diagram.
 - d) Suppose that instead of subsidizing the price of health care, the government decides to give them the equivalent dollar amount as an unrestricted cash grant. In other words, they get a monthly lump-sum transfer equal to the amount you calculated in (c). Will Mick and Jerri prefer this program to the original subsidy approach? Briefly explain.