Econ 344 Public Finance Spring 2005
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Homework Assignment 5. Due: Thursday, March 3.

1. (6 points) Wayne is maximizing his utility by choosing how many hours to work a week. His preferences for leisure (L) and consumption of all other goods (C) are given by $U= C^{1/4}L^{3/4}$. Wayne's labor supply (l) can be calculated by deducting his leisure consumption from total number of hours available to him in a week: l=7*24-L=168-L. The price of leisure (=wage rate, *w*) is equal to \$5/hour. The price of consumption of other goods P_C is \$1. Wayne's optimal consumption of leisure can be computed according to the following demand function $L^*=(3/4)(I/w)$, where I is his income, which is equal to I=168*w=168*5=\$840. Wayne's consumption C is equal to $C^*=(1/4)(I/P_C)$. (Notice that Wayne won't actually make \$I in cash, he spends part of his income by not working and consuming leisure, which has the same price as his labor.)
    a. Carefully draw Wayne's budget constraint. Calculate his optimal consumption of leisure L^* and all other goods C^*. Label this consumption bundle as point A on your graph. What is the level of Utility that Wayne derives from it?
    b. Now suppose that government introduces a welfare program, which has the following benefit level B=G-t*w*l; where B is the benefit level, G is the basic grant equal to \$100, t is the benefit reduction rate equal to 0.25, and *w* is the wage rate. How many hours Wayne has to work to reduce his benefit to zero and how much money would he earn in this case? On the same graph draw a new budget constraint (hint: the kink will happen where Wayne's benefit is zero.) Based on your graph determine whether Wayne will decide to enroll in this welfare program at all? (hint: if Wayne's new optimal allocation is likely to lie on the new segment of the budget line, he's going to enroll.)
    c. Now let's determine analytically whether Wayne will enroll in this program. To do so, we have to calculate his optimal consumption bundle *assuming that he enrolls*: in this case his income is going to be determined by I=100+(1-t)*w*168=100+630=730, the wage is going to be equal to (1-t)w=\$3.75; plug these new income and wage numbers to determine new optimal consumption of leisure L and other goods C. Label this allocation as point B on your graph. What is the level of utility associated with this bundle? Compare this utility level to the utility you obtained in (a). Is Wayne going to enroll in this program? If so, is his labor supply going to be lower than in (a)?
    d. Now suppose that the government offers the following welfare program instead: the basic grant G is equal to \$300, the benefit reduction rate t is equal to 1. Sketch the new budget line (you don't have to draw it exactly this time). Intuitively, do you expect Wayne to work at all with this program present? Why or why not?

e. Suppose that Medicaid eligibility is tied to the welfare eligibility. Does this have any effect on the incentives to work?

2. (2 points) Suppose that the state of Iowa is considering an increase in the funding of primary schools in the state. Explain using graphs how this can lead to a decrease in the overall level of educational spending in the state?
3. (2 points) Read the Policy Debate on School Vouchers at: http://www.swlearning.com/economics/policy_debates/vouchers.html (read only the main part; do not follow links unless you want to). Briefly summarize the arguments for and against school vouchers based on what you read.