Wilf Csaplar Jr.   Economics 477   Homework #4   Due 09/23

Place your name on the back of this sheet of paper and nowhere else. Staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (35 points) Suppose your time constraint is $C + 2B + 3D = 12$ and the budget constraint is given by $C + 2B + D = 8$. If your utility function is given by $U = C^{1/4}B^{1/2}D^{1/4}$, the find the utility maximizing consumption of all variables. Show all work.

2A) (25 points) Suppose your income this year is expected to be 100 and next year it will be 132. If your utility function is $U(C_1, C_2) = (C_1 * C_2)^{1/3}$. Use the Lagrangian method to find the amount of consumption you would do in each period if the interest rate is 10%.
B) (15 points) What is the opportunity costs of consuming today? Explain your logic.

3) (25 points) Use the production function $Q(K, L, T)$ and the cost of capital is $\$r/K$, the wage rate is $\$w/L$, and the cost of land is $\$u/T$. Use this to derive the equi-marginal principle for producing goods. Show all work.