Wilf Csaplar Jr.   Economics 477   Homework #1   Due Tuesday 8/31

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) (5 points) Which part of my web page, http://mysite.bethanywv.edu/wcsaplar/ do you think will be most helpful? Why? Is anything missing that you would like to see? What is the URL for the first exam from this class during the last semester it was taught?

2) (5 points) Which part of the Department of Economics and Business's web page, http://www2.bethanywv.edu/~econ/ do you think will be most helpful? Why? Is anything missing that you would like to see? If you were a sophomore Business major, then what courses does the departmental web page suggest you be taking this semester?

3) (15 points) If $F(X, Y, Z) = 2X^3Y + 4XYZ + Y^2 + \ln(4X)$, then calculate all three first derivatives and all nine second derivatives. Show all work.

4) (25 points) Suppose your utility function was $U(A, B) = A^2B$. Your income is $90. Apples cost $6/lb and bananas cost $3/lb. Set up the Lagrangian and briefly explain how you found it. Calculate how many apples and bananas would maximize your utility. Calculate your utility. Estimate how much your utility would go up if your income went up $3. Show all work for all parts of this answer.

5) (25 points) If $U(C, D) = 4C^{1/4}D^{1/2}$, your income is $180, the price of a cat is $3/cat, and the price of a dog is $1/dog, then set up the Lagrangian and briefly explain how you found it. Calculate how many cats and dogs would maximize your utility. Show all work.

6) (25 points) If your utility function is $U(E, F, G) = 2E^{1/2}F^{1/2}G^{1/2}$. Suppose the budget constraint is $5E + 5F + 5G$. Set up the Lagrangian and briefly explain how you found it. Calculate the utility maximizing consumption of eggs, figs, and greens. Calculate your utility. Show all work for all parts of this answer.