Economics 051
P. Conway

Problem Set 1: Randy's choice

Your answers to this problem set should be submitted to me at the beginning of class on 24 September. Late submission will be penalized. You may work together with your classmates in solving this problem set, but each of you must submit his or her own answers.

The analysis can be done by hand, but I suggest that you create it with a spreadsheet program (Excel is the one on CCI computers). Background information necessary for the solution of this problem set can be found in the Excel file ppf09.xls on the Archives page.

1. Provide graphs of Randy's production functions in corn and tobacco. (10 points)

2. Create and provide a graph of Randy's production possibility frontier in these two crops. What defines the slope of the production possibility frontier? Explain in the context of Randy's choice. (20 points)

3. How much land should Randy allocate to tobacco production? How much tobacco will he produce? Explain how you derived your result. (20 points)

4. How much land should Randy allocate to tobacco production if the price of corn rises to $3/bushel? How much tobacco will he produce? Explain how you derived your result. (20 points)

5. Do your answers in 3. and 4. provide an example of the "law of supply"? Explain why or why not. (10 points)

6. Graph your numerical answers to 3. and 4. on the production possibility frontier you created in question 2. Use the concept of opportunity cost to explain the differences in the two points, and relate this to Randy's choice. (10 points)

7. Suppose that in Lenoir County, 25 acres of good farming land (like Randy's) will rent for $10000 per growing season. Does this change Randy's choice? Explain, relating your answer to the concept of opportunity cost. (10 points)