Problem Set #1 revised 1/6/03

Bruce Brown, Economics 1 (Microeconomic Principles), SMC

Read Chapter 1, 2 (including appendix), carefully. The Production Possibilities Frontier, “PPF” (or “Curve = PPC”) presented in Chapters 2 (and 3 to be covered at end of the class) is very important for both macroeconomics and microeconomics. It is the first graphically presented model in this course.

Writing answers to the problem set questions will be useful, even though you are not required to hand them in. Exams will cover material from the problem sets, lectures and the textbook. Much of the material presented in this class will use graphs and simple calculations.

Answers to all seven problem sets are posted at: http://homepage.smc.edu/brown_bruce/

1) Tradeoffs
   a) In what sense does an individual face a tradeoff between leisure and earned income? What is typically assumed about the individual’s enjoyment of things done at work versus things done during leisure time?
   b) Suppose a shopper has a limited amount of money (or credit if using credit cards). If they buy more of good A, what is true of the amount of good B they can purchase (assuming the amount of all other goods is constant)?
   c) You are shopping for a home and are considering two homes: i) home A: next to noisy freeway, in a good school district; home B: in a quiet area, but in a bad school district. What factors would influence your choice between the two.
   d) You are the chief of police for the city of Pomona. You must decide whether to have more police patrols in the downtown area, or in the hills where the wealthier people live. What influences your decision?

2) In his 1776 book, Adam Smith referred to an “invisible hand.” What does it do?

3) What is an important characteristic of a useful economic model (should it have realistic assumptions?)

4) Money flowing out of firms and into to households is ________ to firms and ________ to households.

5) Other things constant (ceteris paribus), family size is larger in countries: i) without a social security system to care for elderly; ii) that are poorer; iii) in which women are less likely to be employed outside of the home; and iv) where a larger proportion of people work in agriculture. How would an economist explain these facts.

6) The author of our text, N. Gregory Mankiw, earned a BA from Princeton, Ph.D. from MIT, and is now an economics Professor at Harvard. He is very smart and was paid a large amount of money to write the textbook we use. Does this mean the text is always 100% correct? – No, but when in doubt it is safer to assume he is

7) In the Production Possibilities Frontier (PPF) model we assume technology does not change as we move along a particular PPF (e.g., between points A and C in Figure 2-2). Do you think this is a good assumption if the two goods are Computers and Cars? Would it be better if the two goods were Wheat and Corn? Why or why not?

8) Figure 2-2 shows the PPF concave with respect to the origin or “bowed out,” while the PPFs in Figure 3-1 are straight lines. Why? In Figure 2-2, what do we assume happens to opportunity cost of producing an additional car as more cars (and fewer computers) are produced?

9) Draw a standard, bowed out, PPF and show the effect of i) an increase, or accumulation, of productive resources (inflow of immigrant workers, or increase in capital); and ii) an improvement in technology.

10) This is challenging - don’t worry if you have difficulty with it. We may be able to cover material at this level by the end of the class, but nothing of this type will be on the midterms.
   a) Draw a PPF, for an economy that produces only 2 goods, bells and whistles; and which is composed entirely of two types of workers, type A and type B, 100 of each (200 total workers). Place bells on the horizontal axis and whistles on the vertical axis. One type A worker can make 1 bell or 2 whistles (per period); and one type B worker can make 3 bells or one whistle (per period). Assume that production involves only labor time, no machines.
   b) How many bells and whistles can be produced (per period) if: i) all workers make bells; ii) all workers make whistles; iii) all A workers make whistles and all B workers make bells; iv) all A workers make bells and all B workers make whistles. Which of these four possibilities is inefficient (results in output level inside the PPF)?
   c) Show how the PPF shifts if all type A people get better at producing whistles, so that they could make 1 bell or 3 whistles, but the productivity of B people is unchanged.