

**ECONOMICS 2
INTRODUCTION TO ECONOMICS**

PROBLEM SET 1

DUE AT THE BEGINNING OF LECTURE ON THURSDAY, FEBRUARY 7TH.

You may work together on the problems, but the answers must be written up in your own words. For all questions be sure to explain your answers and to use graphs whenever appropriate.

1. It is possible to divide the total amount that the U.S. economy produces into two categories: investment goods, such as machines, roads, and education, which increase production in the future, and consumption goods, such as food, clothing, and entertainment, which give us pleasure right now. Both goods are produced using capital (machines) and labor.

- a. Draw the production possibilities curve (PPC) for the U.S. economy based on this categorization. Explain in words what the PPC represents. Why is the PPC for the entire U.S. economy likely to be bowed out?
- b. Suppose that there is a technological change that allows given amounts of capital and labor to produce more investment goods than before, but has no effect on the productivity of capital and labor in producing consumption goods. How, if at all, would this technological change affect the PPC?
- c. Assume that the economy is at full employment. Suppose that American consumers decide to spend more on consumption goods and so increase the quantity of consumption goods the economy produces. How, if at all, would you expect this development to show up in the PPC diagram?
- d. How would increased enforcement of immigration laws, which led to widespread deportation of workers, affect the PPC?
- e. How might the particular combination of investment goods and consumption goods that the economy chooses to produce affect the PPC in the future? Why?
- f. Suppose that the economy slips into a recession (a time of above-normal unemployment). What effect, if any, would this have on the PPC?

2. Three friends, Katie, Matthew, and Paul, decide to set up an artists' collective producing two simple goods – ceramic pots and woven baskets. While all three artists can produce both goods, they differ in the number of each good they can produce in an hour. The following table shows the number of pots or the number of baskets each worker could produce in an hour.

| | <u>Pots/Hour</u> | <u>Baskets/Hour</u> |
|---------|------------------|---------------------|
| Katie | 2 | 2 |
| Matthew | 3 | 1 |
| Paul | 1 | 3 |

The three artists agree to each work 8 hours per day.

- a. For each worker, what is the opportunity cost of 1 pot (in terms of baskets)? Of 1 basket (in terms of pots)?
- b. Draw the production possibilities curve (PPC) for the collective (for a single day) when there is no specialization – that is, when each worker divides his or her time between pot production and basket production in the same way as the other two workers. Identify and explain the vertical intercept, the slope, and the horizontal intercept of the PPC in this case. Why does the PPC without specialization have the shape that it does?
- c. Draw the PPC for the collective when the three workers specialize according to comparative advantage. Again, identify and explain the vertical intercept, the slope(s), and the horizontal intercept of the PPC in this case. Also, give the quantities of pots and baskets that correspond to any kinks in the PPC. Why does the PPC with specialization have the shape that it does?

3. Describe and show on a separate graph how each of the following developments would affect the equilibrium price and quantity of orange juice in the United States.

- a. Cold weather in Florida greatly reduces the orange crop and therefore raises the price of oranges.
- b. The price of pomegranate juice, an increasingly popular alternative to orange juice, falls because of a bumper crop of pomegranates.
- c. A new government program gives orange juice producers a subsidy of 50¢ per gallon. (Note: A subsidy is just a negative tax – instead of paying the government money, producers receive a payment from the government for each unit they produce.)
- d. A new study shows that drinking orange juice lowers blood pressure and has other previously unrealized health benefits.

4. The government is considering a proposal to set a minimum price (a price floor) for milk that is above the equilibrium price.

- a. Use a supply and demand diagram to show the effect of this policy on the price of milk and on the quantity of milk sold. Will there be a shortage or a surplus of milk?
- b. In the absence of a government commitment to purchase any surplus milk, could such a price floor ever raise the total revenue of milk producers? (Note: total revenue is price times quantity.)

5. For each of the following decide whether the statement is true, false, or uncertain and explain why. Your explanation is the important part of the answer.

- a. A shift back in the supply curve of lemons will increase the quantity of lemons demanded.
- b. A binding price ceiling will reduce the amount that consumers spend on the good if demand is inelastic, but increase it if demand is elastic.
- c. If one person has an absolute advantage over another person in the production of some good, this person has the lower opportunity cost of producing the good.