

PROBLEM SET 3

DUE AT THE BEGINNING OF LECTURE ON TUESDAY, MARCH 12TH

You may work together on the problems, but your answers must be ***in your own words*** and ***handwritten***. You also must ***list the other students with whom you worked***.

For all questions be sure to explain your answers and to use graphs whenever appropriate.

1. Suppose there is an antibiotic that is produced by a monopolist that is very effective in treating some highly contagious diseases.
 - a. Show how much of the drug the monopolist will choose to produce and the price it will charge.
 - b. Why is there likely to be a positive externality from people with these diseases taking the antibiotic?
 - c. Show the total private surplus, the external benefits, and the total social surplus at both the quantity produced by the monopoly and the socially optimal quantity. Is there a deadweight loss?
2. Consider the market for automobile assembly line workers in the 1950s and 1960s, who were almost entirely unionized. Describe how each of the following developments would affect employment and unemployment among these workers. Assume that the negotiated wage is above the wage that would equate the quantity of labor supplied and the quantity demanded in the market for the workers, and assume that the market for automobiles is highly competitive.
 - a. The building of the interstate highway system increases the demand for automobiles at a given price.
 - b. Better opportunities elsewhere in the economy lead some workers to leave the auto industry.
 - c. The installation of new production equipment increases the number of cars a set of workers can produce in a day.
3. Consider the markets for low-skilled and high-skilled labor in the United States. Describe how each of the following developments is likely to affect the wages of low-skilled workers relative to high-skilled workers.
 - a. There is increased demand for apps and smart appliances, which are produced by high-skilled workers.
 - b. The government pays employers a subsidy for each low-skilled worker they employ.
 - c. Some low-skilled workers get more education, and so become high-skilled workers.
4. Suppose that the U.S. produces just two outputs, fruit and clothes. Because workers within the country vary in their relative abilities in producing the two outputs, the opportunity cost of producing each of them rises as more of it is produced.
 - a. Draw the PPC for the U.S. (with fruit on the horizontal axis) under the assumption of rising opportunity cost.
 - b. If the world price of a container of fruit is \$50 and the world price of a unit of clothing is \$100, what are the terms of trade in world markets between fruit and clothes? Show how much fruit and clothes the U.S. will want to produce. (You will

not be able to show actual numbers; just show qualitatively where along the PPC the U.S. will want to produce.)

- c.** What is the consumption possibilities curve with trade for the U.S. in this case? What determines its slope and position? What can we say about the total value of every combination of fruit and clothes along the CPC?
- d.** Show a point on the CPC that corresponds to the U.S. exporting fruit and importing clothes.