

Homework #7
E201 Spring 2009

The problems below draw from your growing knowledge of economics and the material in Chapters 6, 7, and 8.

1. If the government places a \$500 tax on luxury cars, will the price paid by consumers rise more than \$500, less than \$500, or exactly \$500? Explain.
2. The FICA tax funds Social Security programs. Congress established a 15.3% FICA tax rate; by law, the tax burden is split 50-50 between employer and employee. So, 7.65% of the employee's earnings on each paycheck is deducted for FICA taxes, and 7.65% of the employee's earnings is paid in FICA taxes by the employer. Is the economic incidence of the FICA tax shared equally by employer and employee? Explain.
3. It is a hot a day and Bert is very thirsty. Here is the value he places on a bottle of water:

Value of first bottle	\$7
Value of second bottle	5
Value of third bottle	3
Value of fourth bottle	1

If the price of a bottle of water \$4, how many bottles does Bert buy? How much consumer surplus does Bert get from his purchases?

4. Ernie owns a water pump. Because pumping large amounts of water uses more resources than pumping small amounts, the cost of producing rises as he pumps more. Below is the cost he incurs to produce each bottle of water:

Cost of first bottle	\$1
Cost of second bottle	3
Cost of third bottle	5
Cost of fourth bottle	7

If the price of a bottle of water is \$4, how many bottles does Ernie produce and sell? How much producer surplus does Ernie get from these sales?

5. Consider a market in which Bert and Ernie (from above) are buyer and seller, respectively.
 - a. Use the information above to find Bert's quantity demanded at prices of \$2, \$4, and \$6. Similarly, find Ernie's quantity supplied at prices of \$2, \$4, and \$6. Which of these prices brings the amount supplied and the amount demanded into equilibrium?
 - b. What are consumer surplus, producer surplus, and total surplus at this equilibrium?

- c. If Ernie produced and Bert consumed one less bottle of water, what would happen to total surplus?
 - d. If Ernie produced and Bert consumed one additional bottle of water, what would happen to total surplus?
6. An early freeze in California sours the lemon crop. What happens to consumer surplus in the market for lemons? What happens to consumer surplus in the market for lemonade? Illustrate your answers with diagrams.
7. Suppose the demand for French bread rises. What happens to producer surplus in the market for French bread? What happens to producer surplus in the market for flour? Illustrate your answers with diagrams.
8. Consider how health insurance affects the quantity of health care services performed. Suppose that the typical medical procedure has a cost of \$100, yet a person with health insurance pays only \$20 out of pocket when he/she chooses to have an additional procedure performed. The insurance company pays the remaining \$80. (The insurance company hopes to recoup the \$80 through higher premiums for everybody, but the share paid by the individual consumer is small.)
 - a. Draw the demand curve in the market for medical care. (The horizontal axis represents the number of medical procedures.) Show the quantity of procedures demanded if each procedure has a price of \$100.
 - b. Show the quantity of procedures demanded if consumers pay only \$20 per procedure. If the cost of each procedure is truly \$100, and if individuals have health insurance as described above, will the number of procedures performed maximize the total surplus? Explain.
 - c. Economists often blame the health insurance system for excessive use of medical care. Given your analysis, in what sense is use of health care “excessive”?
 - d. What are two solutions that would prevent this excessive use?
9. Using the metaphor of a pie, explain the difference between maximizing economic efficiency and economic equity.
10. Assume that the market for pizza is characterized by a downward-sloping demand curve and an upward sloping supply curve.
 - a. Draw the competitive market equilibrium. Label the price, quantity sold, consumer surplus, and producer surplus. Is there any deadweight loss? Explain.
 - b. Suppose the government forces each pizzeria to pay a \$1 tax on each pizza sold. Illustrate the effect on this tax on the pizza market, being careful to label the

new price and quantity sold, the consumer surplus, the producer surplus, the deadweight loss, and government revenue. How does each compare to the pre-tax case?

11. The demand for beer is more elastic than the demand for milk. (Why?) Assuming the same supply elasticity for beer and milk, use a model of each market to answer the following:
 - (a) Would a tax on beer or milk raise more revenue?
 - (b) Would a tax on beer or milk have the greater deadweight loss (excess burden)?