Problem Set 10

Econ 115a
April 17, 2001

This problem set is optional, for extra credit. Whether or not you do this problem set, we will drop your lowest problem set score. If you do this problem set, we will drop the two lowest scores (this one included.)

Since there is no lecture next week, your TAs will announce where and when to turn in this problem set next week.

There will be discussion sections this week, including next Monday (usual time and place.)

Be sure to mark your paper with your name, your teaching assistants' name and section time.

1. Define
   (a) Pure Public Good
   (b) Externality
   (c) Head Tax

2. Consider the market for a pure public good.
   (a) Graph the amount of the good provided in a private supply-and-demand market.
   (b) Graph the optimal provision of the good.

3. XYZ Company produces steel. The production process creates pollution. There are no other external costs or benefits.
   (a) On a graph, show the private demand and supply curves, as well as the marginal social benefit and marginal social cost curves.
   (b) What quantity is produced in the absence of any regulation of pollution?
   (c) Show how a tax on pollution can lead to the optimal level of production.

4. Suppose that everyone in a country has the same utility from income, $U(Y)$, but different people have different incomes.
   • First, assume that income does not respond to taxation. What is the optimal distribution of income if one wants to maximize the sum of all utilities?
   • What problems arise with this solution if income levels are distorted by taxation?

5. On a consumption/leisure graph of labor supply, show how an income tax will affect an individuals labor supply.