The problems below draw from the material in Chapter 11 and accompanying lectures.

1. Explain what is meant by a good being “excludable.” Explain what is meant by a good being “rival” in consumption. Is a pizza excludable? Is it rival?

*Excludable* means that someone who does not pay for a good can be excluded from consuming it.

*Rival* means that the amount of a good consumed by one person makes that much of the good unavailable for any other person to consume.

Pizza is both rival and excludable.

2. Define and give an example of a public good. Can the private market provide the efficient quantity of a public good? Explain.

A public good is neither excludable nor rival.

National defense and tornado sirens are examples of public goods.

3. Define and give an example of a common-property resource. Without government intervention, how will people use this good—too little, too much or just right? Why?

A common property resource is rival but not excludable. An ocean fishery and a common meadow are examples.

Common pool resources are likely to be overused. Since no one has property rights to the resource, its use is not priced.

4. No one owned the bison that roamed the Great Plains in the nineteenth century. How did this fact contribute to their extinction? Cite some analogous examples of today.

The bison were a common property resource, so they were over-harvested.

Whales, tigers, rhinoceroses.

5. Pretentious Pedro advises, "Study as much as you possibly can for the next exam.” Correct him, using the economic decision rule.

Your welfare is maximized when you study (or engage in any other activity) as long as the marginal benefits are greater than (or equal to) the marginal cost. As with most other decisions, the decision to study an additional hour is made under uncertainty: you do not know the exact payoff of an additional hour of study; you are, however, more likely to know the opportunity cost of an additional hour’s study. But we almost always have to make decisions based on expected benefits vs. expected costs, both evaluated at the margin.

6. Chapters 10 and 11 provide an economic rationale for government involvement in two types of market inefficiencies: externalities exist or public goods (and common property resources). Most government activity does not involve one of these problems, which raises the larger problem of the appropriate size of government. Watch the two videos of Milton Friedman and answer the questions that follow:

http://www.youtube.com/watch?v=JfdRpyfEmBE
http://www.youtube.com/watch?v=prmggcDVe6w&feature=related

a. Explain why Friedman says that it is a fallacy to think that government can do good with other people’s money.

**Friedman cites two reasons:** (1) Redistribution by government requires coercion. Government uses force (or at least the threat of force) to tax income away from one person and transfer it to another. (2) Nobody spends other people’s money as carefully (meaning, giving the highest utility) as they spend their own.

b. How does Friedman characterize the natural condition of mankind? What time period is the most notable exception? How did Friedman evaluate the trend in individual liberty when he did the “Open Mind” interview, which was probably the late 1970s (Who picked that creepy music for the introduction?). Are we further down the “road to serfdom” now or not?

Friedman’s understanding of history is that humans’ “natural condition” is one of central authority and collectivism. Sometimes he refers to this as a state of tyranny and misery.

According to Friedman, the 19th century (and maybe a few more years on either end) was a period of time during which human liberty grew in the U.S.

Friedman’s view is that human liberty declined steadily from 1930 until he gave the interview. Being able to decide how to spend the income you earn is an important part of liberty, perhaps the most important (recall Locke’s phrase of “life, liberty and property”). Friedman argues that, as government allocated an increasingly large share of national income, human liberty declined.

Friedman said that roughly 40% of national income is spent by government (federal, state, and local combined) in the 1970s. It is the same today. 2007 NI was $12,270 billion; gov spending (all levels) was $4904 billion; ratio was ~40%. As Friedman says, that means our economy is 40% “socialized.” So by this measure, we have been holding steady on the “road to serfdom” since the 1970s—until recently, that is. Current government spending as a percent of output (the ratio of G/GDP) is 44.9%. Freidman would be neither surprised nor pleased.

c. What does Friedman say are the legitimate roles of government? What is his optimal size of government?

**Government should provide courts, defense, police (maybe fire protection), and some small measure of relief to really poor people.** (For reference, most of the “poor” (lowest quintile of incomes) would probably not be the folks Friedman would provide relief for. After all, 80% of poor households in the U.S. today have air conditioning in their homes. Only 36% of all households had air conditioning in 1970. 75% of poor households who a car; 31% own two cars. The typical poor American household has more living space than the average Parisian or Londoner.)

d. Why, according to Friedman, is government inefficiency a blessing?

First, if government were more efficient in spending 40% of our national income, we would have less freedom. So the inefficiency of government programs gives us more freedom. Second, visible government waste makes a good argument for people
7. Forty-one per 100,000 full-time roofers and thirty-three per 100,000 full-time coal miners die from a fatal occupational injury each year. If roofers are paid $500 a year more than coal miners, what is the statistical value of life?

The compensating differential to accept additional risk can be used to determine the value that a worker places on life. In this problem, there are 8 more deaths per 100,000 among roofers as compared to coal miners.

A ratio of 8 additional deaths per 100,000 roofers is equal to 1 additional death per 12,500 roofers.

If 12,500 miners were to switch to roofing, there would be one more death per year:

\[ 12,500 \times \frac{8}{100,000} = 1 \]

Those 12,500 roofers are each paid $500 more to compensate them for this additional risk. So the statistical value of life in this scenario is

\[ 12,500 \times $500 = $6,250,000 \]