

Sample Exam Suggested Solutions
Parts Not Covered for Econ Midterm 1 Summer 2003 Removed
(For Graphs, see GSI or Instructor)

1) Definition (T/F/Uncertain) (15 points, 10 minutes)

First, define the term in bold. **Second**, state whether statement is T/F/Uncertain. **Third**, give a succinct reason for your conclusion.

- a) It is efficient to have a unit tax on a good with inelastic demand in a perfectly competitive market (with no externalities) because there is no **deadweight loss**.

Deadweight loss is the loss in total economic surplus that results from implementation of the tax (or a policy).

False.

It is correct to say that it is efficient to have a unit tax on good with inelastic demand because this *minimizes* the deadweight loss. Deadweight loss would be zero only if demand were perfectly inelastic.

- b) All workers are happy with a **minimum wage policy** because it is a policy that ensures that employers pay workers a minimum acceptable wage.

The Minimum wage is a type of income redistribution policy. It is a price floor on wages. Employers are required to pay hired workers the stipulated minimum wage.

False

Only those workers who get jobs are better off with a wage higher than the pre-policy equilibrium wage. There is a surplus in the labor market with this price floor; more workers would have liked to work than are actually employed.

- c) In the **lemons model**, only low quality goods end up being sold on the market and prices spiral downward.

Lemons model is George Akerlof's explanation for how asymmetric information tends to reduce the average quality of goods offered for sale.

True

Consider the market for used cars. Buyers do not know the quality of used cars in the market, and hence are not willing to pay above the average price, which reflects the average quality. Therefore sellers of above-average quality cars are not willing to sell their cars at the average price, while sellers of below-average quality cars are happy to receive the average price. So the average quality of cars offered for sale declines, and the average price declines over time.

2) Long Question (15 points, 10 minutes)

The A&B Yummy fishery has two fishermen: Alice and Barnaby. The fishery is able to maintain adequate levels of fish for sustainable growth if each uses 1 boat with capacity of 1 ton of Yummy fish. Alice and Barnaby each have a license for using this fishery, for which they were charged a one-time fee. On a given day Barnaby does not even see Alice's boat and vice versa. Each must decide whether to use 1 or 2 boats. Their daily payoffs (profits) under the two possible actions are as follows:

		Alice (A)	
		1 Boat	2 Boats
Barnaby (B)	1 Boat	10 for each	20 for A # -5 for B
	2 Boats	- 5 for A 20 for B*	1 for each#*

a) What is the equilibrium outcome of this game? Show your work (either separately or in the diagram above) and explain.

See matrix above for decisions: # is best response for A and * is best response for B.

Equilibrium outcome is each puts 2 boats and each earns 1 unit profit.

b) Is this a Prisoner's Dilemma game? Define Prisoner's Dilemma and explain.
Yes.

A Prisoner's Dilemma game is one in which each player has a dominant strategy, and when each plays it, the resulting payoffs are smaller than if each had played the another strategy

Here the dominant strategy is (2 boats by A and 2 boats by B). The strategy that makes each better off is (1 boat by A and 1 boat by B).

Payoff under the dominant strategy is 1 each, which is lower than 10 each.

c) Now, suppose the government imposes an additional fee of 15 per day for use of a second boat. What is the payoff matrix now? What is the equilibrium outcome? Show your work.

		Alice (A)	
		1 Boat	2 Boats
Barnaby (B)	1 Boat	10 or each # *	20-15=5 for A -5 for B*
	2 Boats	- 5 for A # 20-15=5 for B	-14 for each

See matrix above for decisions: # is best response for A and * is best response for B.
Equilibrium outcome is both put out 1 boat and earn 10 each.

d) What is the **name** of the famous economic problem that the government has been able to solve by monitoring and enforcement of this additional fee for an extra boat?
Tragedy of the Commons

3) Short Answer (7 points, 5 minutes)

A member of the state legislature, whose state has a high unemployment rate, says that his state's achievement test score average is among the lowest in the nation and that this is the main reason high-tech firms that hire young talent will not locate in the state. The only way to improve scores is for students to get more coaching on these tests. Many private providers offer this instruction.

The legislator makes the following argument: the socially-optimal amount of instruction is higher than what the free market brings about.

He then suggests reforms that he claims will bring about the socially-optimal level.

a) Briefly explain the idea behind this legislator's argument.

Legislator thinks society gets a benefit in excess of private benefit for each unit instruction. This benefit per unit is some amount XB , which is the value of the economic growth associated with more employers being attracted to the region to hire local workers they expect to be well educated.

b) Use a graph to show the free market level and the socially optimal level of instruction.

FOR REQUIRED GRAPH SEE GSI OR INSTRUCTOR

c) What type of policy might the legislator be considering to get the outcome that is socially desirable

Subsidy for instruction, in the amount XB per unit

4) Long Question (15 points, 10 minutes) *EDITED, SEE EXAM QUESTIONS*

Economic advisors have suggested to Uzbekistan that the reason many suppliers have not entered the Uzbeki water distributor industry is that water distribution is a natural monopoly. There is presently one private supplier.

- a) What is the key characteristic of cost structure which defines a natural monopoly. Draw a graph of the cost curves only and explain.

Everywhere declining AC, MC below AC; High fixed costs

FOR REQUIRED GRAPH SEE GSI OR INSTRUCTOR

- b) On a graph, show optimal P and Q for the monopoly water distributor in an unregulated market.

FOR REQUIRED GRAPH SEE GSI OR INSTRUCTOR

- c) Suppose that the Uzbeki government wants the water supplier to provide the socially optimal amount of water. What condition defines this optimum? Show P and Q at the social optimum. What is profit? Draw a graph as part of your answer.

FOR REQUIRED GRAPH SEE GSI OR INSTRUCTOR

Social optimum where $P=MB=MC$. Profit < 0 ; loss is $(AC - MC)*Q$ or say $(AC-P)*Q$.

5) Long Question (15 points, 10 minutes)

The Berkeley City council wants to impose rent control of \$540 for a standard apartment, which is below the market rent of \$600. Opponents claim this will reduce supply of apartments by 15%. Proponents argue that supply will be reduced by only 2%.

Explain the key assumption being made by each side about the supply curve for apartments. You must include an exact numerical answer and show your work.

Change in P: $600 - 540 = 60$, $60/600 \times 100\% = 10\%$

Opponents: supply elasticity = $\Delta Q/\Delta P = 15/10 = 1.5$, $1.5 > 1$, elastic supply

Proponents: supply elasticity = $\Delta Q/\Delta P = 2/10 = 0.2$, $0.2 < 1$, inelastic supply

b) Which side do you think is correct in the short-run? Why?

Proponents: expect supply elasticity to be low in SR.
Acquiring permits, building structures etc takes time

c) What government policy will result in lower rents without reducing economic surplus in the long-run?

Policy that shifts supply curve out

For example easing zoning restrictions to make it easier to build apartments in more locations in city