Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 240 points (to be scaled down to 200 points) and is scheduled to take 120 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 10-point question should take 5 minutes.

1) (12 points) Answer EITHER Part A OR Part B.
A) What is the equation for output efficiency, i.e., putting out the correct goods? Explain why that equation makes sense.
B) What do you think the β for the company in the comic strip is? Explain your logic. More of his cartoons can be found at http://www.closetohome.com/.

"Yeah, I've been lucky. My business is pretty darned recession-proof."

2) (14 points) Answer EITHER Part A OR Part B.
A) The last time Bethany College hired an Economics Professor, we had 230 candidates. If you had been one of the 230 candidates, what could you have done to signal you were serious about wanting to work at Bethany College and/or you are a hard worker? Explain how that action would send that signal. I am looking for more than just getting a Ph.D.
B) A few schools have started to give some tuition deals where the student pays not tuition, but for the twenty years after graduation, they give the school 5% of their income. Explain the economics of why schools would do this.

3) (18 points) Answer EITHER Part A OR Part B.
A) What is a common value auction? Would it be better to have a sealed bid or an open bid auction? Explain your logic.
B) Draw the diagram for a monopsony in an input. Explain how the equilibrium price and quantity are found.

4) (20 points) Answer EITHER Part A OR Part B.
A) The Second Annual Immortal Rock Festival Part 1 is a two-day festival. You can buy a one-day ticket for $50 or a two-day ticket for $80. Draw the graph for buying an individual ticket or a bundle. Explain why the graph looks as drawn. I am willing to pay $100 to see One Bad Pig and $30 to see Deliverance, both of whiom are playing the first day. Two of the bands playing the second day have members who came from bands I like, so I would be willing to pay $5 each for those two bands. Where am I on your graph and did I buy a one-day ticket or the bundled two-day ticket? Explain your logic.

B) Suppose there is a Cournot duopoly with constant marginal costs of $6/unit. The industry demand curve is given by $P = \$30 - \frac{1}{3}Q_I$. Find the best response functions, BRFs, and equilibrium quantities produced. Do not worry about drawing the BRFs. Draw the equilibrium industry demand, Firm 1's residual demand, and marginal cost curve. Explain how the quantity produced and price are seen on the graph.

5) (20 points) Suppose your dishwasher died. You have the following three options. 1) Do dishes by hand. 2) Buy a LG dishwasher which costs $300 and costs about $30 per year to run. At the end of 10 years, it will need to be replaced. 3) Buy a GE dishwasher which costs $330 and costs about $25 per year to run. At the end of 10 years it will need to be replaced. You are willing to pay $60 per year to not have to do dishes by hand. Your discount rate is 2%. Not all information is used in both parts. .
A) Which is better for you, buying the GE dishwasher or doing them by hand? Set up the calculation **without actually solving it.** Explain how you decided what numbers to put where and how you would use the final result to determine which is better.
B) Which is better for you, buying the LG dishwasher or the GE dishwasher? Set up the calculation **without actually solving it.** Explain how you decided what numbers to put where and how you would use the final result to determine which is better.

6) (20 points) Answer EITHER Part A OR Part B.
A) Would climate change induced damage to property be a diversifiable or non-diversifiable risk for a property insurance company? Explain your logic. Give an example of the other type of risk for the same company and state why it fits the other type.
B) Give an example of a stock externality. When is it more profitable to society to abate the externality? Is it more likely to be profitable where there is a high or low dissipation rate? Explain your logic. Is it more likely to be profitable where there is a high or low discount rate? Explain your logic.

7) (24 points) Answer EITHER Part A OR Part B.
A) Draw two different MRPL curves for two firms. Find the total demand for labor assuming that there are only the two firms and the price of the final product does change. State how you found that demand curve. If we relaxed the assumption that the price of the final product does not change, how would the graph change? Explain your logic.
B) Suppose you were the head of a company deciding on whether or not build a factory. How would you decide what discount rate you would use? Explain your logic. Suppose you were considering going to graduate school. How would you decide what discount rate you would use? Explain your logic.

8) (26 points) Answer EITHER Part A OR Part B.
A) Draw an indifference curve/budget constraint diagram for income vs. leisure. Draw an increase in the wage rate. Explain why the line(s) moved as drawn. Given your diagram, are you in the upward sloping or the downward sloping part of the supply of labor curve? Explain your logic.
B) Copy the payoff matrix into your bluebook. Find all pure Nash equilibria, the

Question #8		Dick		
		High Quality	Medium Quality	Low Quality
Jane	High Quality	10 4	9 5	13 7
	Medium Quality	12 6	7 15	12 3

cooperative strategies, and the secure (maximin) strategies. Does either person have a dominant strategy? Briefly explain how you found every answer.

9) (26 points) Answer EITHER Part A OR Part B.
A) Draw the Edgeworth-Bowley Box for two people getting tea and coffee. Draw at least three indifference curves for each person and the contract curve. Find a point off of the contract curve where the person on the upper-right corner gets ¾ of the tea and ¼ of the coffee. Prove the point is not Pareto Optimal.
B) Draw the MEC/MAC diagram for a pollutant. Explain why the curves take their shape. How do economists say is the best way to achieve the optimal level of pollution? Explain how that would achieve the optimal level of pollution. Why doesn't the current system used by the EPA achieve that? Explain your logic for that last part without drawing a graph.

10) (30 points) Answer EITHER Part A OR Part B.
A) Draw the demand/MC diagram for a firm which is doing third-degree price discrimination and has an upward sloping marginal cost curve. Find the total quantity produced, quantity sold in each of the two markets, and the prices charged in the two markets. Explain how you found all of them.
B) Draw the demand/MC diagram which has two factories with different upward sloping marginal cost curves. Find the total quantity produced, quantities produced in each factory, and the price charged. Explain how you found all of them.

11) (30 points) Answer EITHER Part A OR Part B.
A) Draw the D/MC/ATC diagram for a monopolistically competitive company which is making money. Find the price charged and the quantity produced. State how you found them, and know they are making money. What will happen over time? Illustrate that on the graph. Explain why the curve(s) moved as drawn and why the curve(s) stopped moving where you drew.
B) This question is about the two-part tariff pricing. Draw the demand/MC diagram for a monopoly facing a horizontal marginal cost. Draw two different demand curves which are parallel. Place a price at a given level (not necessarily the optimal level). Assume the admission's fee is the consumer surplus of the person with the smaller demand. Find the total profits the firm makes off of the two customers combined. Explain how you found it.