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 100 points (to be scaled up to 160 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I cannot give extra time because some students have a class after your class.

1) (10 points) Answer EITHER Part A OR Part B.
A) What value do you think the cross-price elasticity of demand between suits and ties is? Explain why you chose that number.
B) What value do you think the income elasticity of demand for used cars is? Explain why you chose that number.

2) (12 points) Answer EITHER Part A OR Part B.
A) Suppose you lent somebody $500 today. They agree to pay you $300 in one year and another $300 in two years. Set up the calculation you could use to find out what return you are getting. Briefly explain how you decided on what numbers to put where. Do NOT solve it.
B) When you "win $1 million" on the lottery, if you take the money all at once, you will get less than $1 million before taxes (and much less than that after taxes.) If you take it over 25 years, you get $40,000 per year before taxes. (25*40K = 1 million.) Explain why you NEVER actually win $1 million regardless of how you get the money.

3) (12 points) Answer EITHER Part A OR Part B.
A) Suppose you bought only textbooks and food. Why would you want $MU_T/P_T = MU_F/P_F$?
B) What does the Law of Diminishing Marginal Utility mean? How does that relate to the demand curve?

4) (14 points) For EITHER the type of business in Part A OR the type of business in Part B, tell me one if it is easy or hard to raise funding and why. Also tell me whether the company will always be run the way the owners want it run. Explain your logic.
A) Partnership
B) Corporation

5) (16 points) Answer EITHER Part A OR Part B.
The table to the right can be used to three different elasticities. However, of the 6 possible pairs of rows only one can be used for each part. Figure out which pair of rows can be used. Explain how you reached that conclusion. Then calculate the requested elasticity. What does that information tell you about the demand for the product(s)? How can you tell? Show all work. Note, the results may not be realistic and you should never get an answer of 0.
A) E_P using the arc elasticity formula.
B) Income elasticity using the point formula.

P_{nuts}	P_{pears}	Income	Q_{nuts}
$2/lb	$4/lb	$100	80
$6/lb	$6/lb	$150	80
$2/lb	$4/lb	$150	100
$2/lb	$6/lb	$150	120

6) (18 points) Answer EITHER Part A OR Part B.
A) Draw the supply and demand for a good like murals on the sides of buildings which creates a positive externality. Prove the market will not produce the optimal quantity at the optimal price. What do economists say should be done to correct this problem? Do NOT worry about showing that on the diagram.

B) Suppose a person was facing the following tax brackets. If they earned $50,000 per year, then what are their marginal tax rate, total taxes paid, and average tax rate? Show all work and if there is no work, then explain how you got your answer.

bracket	rate
$0 - $20,000	10%
$20,000 - $40,000	20%
$40,000 - $60,000	30%
> $60,000	40%

7) (18 points) Answer EITHER Part A OR Part B.

A) Suppose there is a project which would have $600 benefit to the person who does it, and costs $400 to them. There is also a negative externality of $2 per person for 150 people. Should this project be done? Would the market do it? Would voting result in the project's being done? Explain your logic for all three parts.

B) What is the long-term problem facing Social Security? What are the two long-term trends which mean the problem will get worse for the next decade? State how they will make the problem worse. One of the proposals to reduce the problem is to "means test benefits." What does that mean? How would that reduce the problem? Should this be part of a package to save Social Security? Explain your logic.