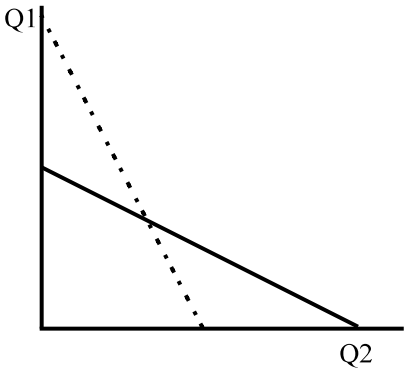
Write your name on the cover of the test booklet and nowhere else. Failure to follow these directions will cost you 1 point. The test has 240 points (to be scaled down to 200 points) and is scheduled to take 120 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 14-point question should take 7 minutes. I cannot give extra time because the class that follows yours.

1) (8 points each) Use the regression results at the end of this exam to answer THREE of the following five parts. For the last four parts, assume the answer to Part A is that you are confident with the results, even if you are not confident and/or did not do part A. The regression was predicting banana sales.
A) If your research people gave you the printout, would you be confident in using the results to make predictions. Explain your logic.
B) Which variables have statistically significant coefficients? Explain your logic.
C) Are the bananas and apples substitutes, complements, likely substitutes, likely complements, or indeterminate from these results? Explain your logic.
D) If the firm lowered its price $10/lb of bananas, how much would you expect the sales to increase? Explain your logic.
E) If you did $100 worth of advertising, how much would you expect the sales to change? Explain your logic.

2) (10 points) Answer EITHER Part A OR Part B.
A) Use the table below to calculate the CR4, CR8, CR10 and the HHI. Show all work and briefly state how you did it. The numbers represent levels of output and all firms are listed.

Firm	1	2	3	4	5	6	7	8	9
Output	10	10	10	10	20	20	30	40	50

B) Given the best-response functions to the right, which is for which firm? Explain your logic.



3) (10 points) Answer EITHER Part A OR Part B.
A) President Smith has said that he thinks the lowering of tuition four years ago reduced the demand for a Bethany education from some individuals. What is the term we used for that effect? What causes it?
B) Draw a very elastic demand curve and briefly state why you drew it as you did.

4) (14 points) Answer EITHER Part A OR Part B.
A) What is the sign of MR when the demand is elastic? What is the sign of MR when demand is inelastic? Will a firm produce in the elastic or inelastic section of the demand curve? Explain the reasoning for all three parts of this question.
B) In the long-run for a monopolistically competitive firm, is it true that the MR curve must cross the MC curve at the same quantity as where the demand curve is tangent to the ATC curve? Explain your logic with a graph of D/MR/MC/ATC for a monopolistically competitive firm in the long-run equilibrium.

5) (14 points) Answer EITHER Part A OR Part B.
A) Explain what "Personal Mastery" is and why it is important to a *Learning Organization.*
B) State what a TQM project is and explain why it must have clear goals.

6) (20 points) Use the payoff matrix below to find the following, if they exist: each players' dominant strategy, each players' secure strategy, the Nash equilibrium, and the cooperative equilibrium. Briefly

explain how you got each one and show all work. You may write on the matrix itself. This model assumes that the professor scales the exam based upon how the class does, and that students do not like studying.

		You	
		Study hard	Don't study much
Others in class	Study much	9 utils 8 utils	7 utils 6 utils
	Study little	12 utils 6.5 utils	11 utils 7.5 utils

7) (20 points) Illustrate EITHER the event in Part A OR the event in Part B on the supply and demand for apples. Explain why the curve(s) moved as drawn and state what happens to the price and quantity purchased.
A) Honey bees are being killed by mites. (This is really happening.)
B) Farm workers get higher wages.

8) (24 points) Copy this table into your blue book and fill it in. Show all work for all calculations.

Q	TC	TVC	TFC	ATC	AVC	AFC	MC
0			120				
1	180						
2							30
					45	30	

9) (24 points) Answer EITHER Part A OR Part B.
A) Draw an ATC/AVC/AFC/MC diagram for a perfectly competitive firm in the long run equilibrium. Show an increase in rent. Explain why the curve(s) moved as drawn. In the short-run, what happens to quantity and price? Explain your logic. In the long-run, what will happen to quantity and price? Explain your logic. There is no need to draw the long-run effects on the graph.
B) Draw the ATC/AVC/AFC/MC for a monopoly making money. Show a rent increase. Explain why the curve(s) moved as drawn. What happens to quantity and price? Explain your logic. If you assumed rent was a variable cost, how would your answer have differed if rent was a fixed cost? If you assumed rent was a fixed cost, how would your answer have differed if rent was a variable cost?

10) (24 points) Suppose that there is a sequential game in which you and your roommate have to decide on who is going to clean the room. Your roommate gets home and leaves before you get home. Your parents are coming to visit. Your roommate gets 10 utils if you clean it, 1 util if he/she cleans it, and no utils if it stays messy. You get 100 utils if your roommate cleans it, -2 utils if you clean it, and no utils if it stays messy. Set up the decision tree the two of you face. Explain how you chose who is Player A and

who is Player B and how you found the payoffs. Find the equilibrium. Explain how you found it.

11) (24 points) Answer EITHER Part A OR Part B.
A) Suppose a firms's total cost function is represented by $TC = 100 + 5Q + \frac{1}{2}Q^2$ and the total revenue function is represented by $TR = 8Q - Q^2$. Find the formulas for TVC, TFC, ATC, AVC, AFC, MC, and MR. Show all work and if there is no work to show, then briefly state how you got the formula. Use those equations to calculate the profit-maximizing quantity. Two points extra credit if you can figure out the price.
B) Use the table to the right to calculate the own-price elasticity, cross-price elasticity, and income elasticity. Show all work. Explain how you chose the numbers for each calculation. (There are six possible pairings, but each calculation will have a separate, unique pairing. Only one pairing will work per calculation.)

$P_{bananas}$	P_{apples}	Income	$Q_{bananas}$
12	5	100	18
10	6	100	21
10	5	130	28
10	5	100	20

12) (30 points) Answer EITHER Part A OR Part B.
A) Draw an indifference curve/budget constraint diagram for peanut butter and jelly. Illustrate a decrease in the price of jelly. Show the income and substitution effects. Given your diagram are they substitutes or complements? Explain why the curve(s) moved as drawn and explain your logic.
B) Draw an isoquant/isocost diagram. Use it to plot three points on the LRTC diagram. Explain how you found the points.

For #1

Regression Statistics

Multiple R	0.6321
R Square	0.6101
Adjusted R Square	0.5821
Standard Error	2.077
Observations	46

Analysis of Variance

	df	*Sum of Squares*	*Mean Square*	*F*	*Significance F*
Regression	3	2503787.2	834595.74	193449.2	0.0315
Residual	42	181.20013	4.3142889		
Total	45	2503968.4			

	Coefficients	*Standard Error*	*t Statistic*	*P-value*	*Lower 95.00*	*Upper 95.00*
Intercept	-2.575167	27.9137	-0.0923	0.9269	-58.90684	53.75651
Price bananas	-0.168017	0.0479	-3.50767	0.0011	-0.264874	-0.07116
Price of apples	0.0100259	0.0063	1.51742	0.0932	-0.009	0.02358
advertising	0.0410299	0.0202	2.15076	0.8808	0.0082	0.10245