ECO 610-401
Fall 2002
Problem Set #5

Due Friday, December 6 by 4:00 p.m.

1. There are two Ford dealerships in town, Woman-O'-Peace Ford and Paul Miller's Sister's Ford. Each of these new car dealers have three alternative strategies that they could pursue: (1) highlight service department quality; (2) be the low-price dealer on all automobile sales; or (3) hire a local well-known basketball coach and engage in extensive advertising in outlying small towns and rural areas. The payoffs (profits) of these strategies are listed below, with Woman-O'-Peace Ford's profits being the first number in each cell and Paul Miller's Sister's Ford's profits being the second number in each cell.

		Paul Miller's Sister's Ford:		
		Service	Low Cost	Advertising
Woman-O'-Peace Ford:	Service	24,33	18,36	15,42
	Low Cost	36,27	24,30	18,24
	Advertising	33,18	30,24	12,18

   a) Does either firm have a dominant or dominated strategy? If so, explain why and what the implications are for their strategy.
   b) What do you predict will be the outcome of this strategic interaction between these two firms? i.e. what strategy will each firm choose? Briefly explain why.

2. Because your sister-in-law happens to be mayor, you were fortunate enough to be awarded the monopoly franchise to provide cable TV services to your hometown. As such, you are the only provider and as long as you have no competition, the discounted present value of your economic profit stream is $5,000,000. Trouble looms on the horizon, however, because a satellite TV company is considering entering your market. Your monopoly franchise rights only apply to hard-wired cable TV, and do not apply to satellite signals and rooftop 18-inch satellite dishes. If entry occurs and you share the market with a competitor, your discounted present value of economic profits will fall to $2,000,000. If you contest entry and fight a price "war," the discounted present value of economic profits is -$500,000.
   a) You announce publicly that if entry occurs, you will fight. Is your threat credible?
   b) In preparation to fight a price war, you could add capacity to your system, so that you could offer additional channels that your competitor did not. The cost of adding such capacity in preparation to battle for customers is $3,500,000. Only if entry occurs would you find it necessary to utilize this capacity. Should you make such a commitment to deter entry? Explain why or why not.

3. Suppose that the oil industry consists of only two producers, Iran and Iraq. Each country chooses between producing either 2 million or 4 million barrels of oil per day. Depending on their decisions, total output in the world market will be 4, 6, or 8 million barrels. Suppose that the world price of oil will be $25, $15, or $10 depending on how much oil is produced by the two nations. Extraction costs are $2 per barrel in Iran and $4 per barrel in Iraq. Illustrate the choices of strategy and the profit payoffs of each nation in a 2x2 matrix. What do you predict will be the outcome of this game if played only once? If played repeatedly?