MBA 605 Exam Name: _____
September 2008

100 points total. Answer each question in the space provided. General advice: show your work, including any formulas or diagrams that you use in reasoning through your answers.

1. (5 pts.) How would you categorize the market for charter yachts in the Mediterranean Sea, i.e. what type of market structure is it? It might help if you briefly describe the characteristics of this industry.

2. (10 pts.) Suppose that the oil industry consists of only two producers, Russia and OPEC. Russia chooses between producing either 2 million or 4 million barrels of oil per day, while OPEC chooses between producing either 8 million or 10 million barrels of oil per day. Depending on their decisions, total output in the world market will be 10, 12, or 14 million barrels. Suppose that the world price of oil will be $120, $90, or $60 depending on how much oil is produced by each. Extraction costs are $40 per barrel in Russia and $20 per barrel in OPEC. 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?

3. (5 pts.) In 1978 there were 12 major airlines operating in the U.S. The names of the airlines and their respective percent of revenue passenger miles were: United (21.1), American (13.5), Delta (12.0), Eastern (11.1), TWA (9.4), Western (5.0), Continental (4.5), Braniff (3.8), National (3.6), Northwest (2.6), USAir (2.2), and Frontier (2.2). For purposes of this problem you can assume that there were nine minor airlines, each having 1.0 percent of revenue passenger miles. Compute the HHI for this industry.

4. (10 pts.) You run a golf course in Mount Sterling, KY called Old Silage. You have two types of customers, out-of-town golfers and local golfers. The marginal cost of serving either type of golfer is $10. Elasticity of demand for out-of-towners is 1.50, while elasticity of demand for locals is 2.33. What price should you charge each type of customer in order to maximize profits?

5. (5 pts.) Cruise ship lines typically have to deploy their ships nearly a year in advance, in order to make port bookings and other necessary scheduling arrangements. Suppose you are Carnival cruise lines, and your main rival in the Mediterranean is Royal Caribbean cruise lines. If you have the opportunity to schedule your ships and thereby commit capacity to the Mediterranean market in advance of your rival, would you want to do so? Briefly explain why or why not?

6. (10 pts.) Suppose that you work for a pharmaceutical company that has a monopoly on a certain performance-enhancing drug, by virtue of a patent that will expire in the next few years. Your company is considering whether it should alter its cost structure in anticipation of the market conditions that will be faced when the legally protected monopoly ends. Specifically, some members of management have proposed that a more capital-intensive production process be adopted. Variable costs would be reduced, however, fixed costs would be greater. Everyone agrees that the current production techniques are the cheapest way to produce this drug, at any output level the firm chooses to produce. That is, the proposed capital-intensive process would increase fixed costs by an amount greater than the reduction in variable costs when compared to the current approach. Now, thinking strategically, can you think of any reasons why your company should undertake an investment now that will increase the overall cost of producing this drug, even though your variable costs will be lower once the new capital-intensive technique is in place?

7. (5 pts.) What type (category) of price discrimination did Parker Hannifin implement after Donald Washkewicz took over as CEO?

8. (10 pts.) After Burton Denson graduated with honors from the American Trucking Academy, his proud (and rich) parents gave him a new $350,000 tractor-trailer rig. At a recent class reunion of ATA alums, Burton boasted to some fellow truckers that his revenues were typically $25,000 per month, while his operating costs (fuel and maintenance) amounted to only $18,000 per month. The other truck drivers are all employees of various trucking companies, and bemoaned the fact that they are only averaging $5,000 per month in salary and benefits, while Burton is taking home $7,000. They wish that they had rich parents so that they could be in business driving their own rigs like Burton. Since you are attending the class reunion with your spouse, who is also an alumna of the ATA, you overhear this conversation. Your spouse turns to you and says, "OK Mr./Ms. MBA student, I'm driving trucks across the country to put you through school, what do you think of this guy's reasoning? Why don't we take the $350,000 we have in mutual funds and cash it in, and buy me a rig of my own. Then I can quit driving for J. B. Hunt Trucking Co. and work for myself like Burton." How do you answer your spouse? (Hint: this questions calls for an evaluation of the economic profitability of being an independent trucker.)

9. (15 pts.) The year is 1989. Catfish farming has been a thriving industry for several decades in the southeastern United States. The industry is currently in long-run equilibrium. The market price of catfish is $1.00 per pound. 3 million pounds of catfish are produced each year. A typical catfish farmer produces 20,000 pounds of catfish per year.

   a) Illustrate this initial situation in the diagrams below:

   b) The removal of alligators from the endangered species list causes many individuals to start raising alligators. A glut of alligator meat on the market causes the market demand for catfish to decline, since many recipes in southern cookbooks call for the use of either catfish or alligator meat. Now for your analysis:

      - What will happen to the price of catfish in the short run?

      - What will the short-run profit outlook be for catfish farmers?

      - Five years from now, will there be more, the same number, or fewer catfish farmers?

      - What will the profit outlook be for catfish farmers who are in the industry five years from now?

      - Will the price of catfish be equal to, higher than, or lower than $1.00 per pound five years from now?

10. (20 pts.) Two firms in Lexington compete in the market for drinking water supplied to offices. One is Northern Springs whose water is crystal clear but not carbonated. The other is Southern Pelligrino whose water is naturally carbonated but is somewhat "hard." The marketing department of each firm has worked out the following profit matrix depending on the price per 5-gallon bottle charged by each firm. Southern Pelligrino's profits are shown as the first entry in each pair, and Northern Spring's profits are the second entry:

		Northern Spring's Price			
		$3	$4	$5	$6
Southern Pelligrino's Price	$3	24, 24	30, 25	36, 20	42,12
	$4	25, 30	32, 32	41, 30	48, 24
	$5	20, 36	30, 41	40, 40	50, 36
	$6	12, 42	24, 48	36, 50	48, 48

a. What do you predict will be the outcome of this game if the two firms set prices simultaneously?
b. Define Nash equilibrium and explain whether or not this outcome is a Nash equilibrium.
c. Suppose that Northern Springs must set its price first and stick with it, and then Southern Pelligrino is free to respond as it chooses to Northern Springs' price. Draw the game tree and predict the outcome of this sequential move pricing game.