ECO 610 Final Exam Name: _____
July 2016

100 points total. Point values for each question are as indicated. 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.

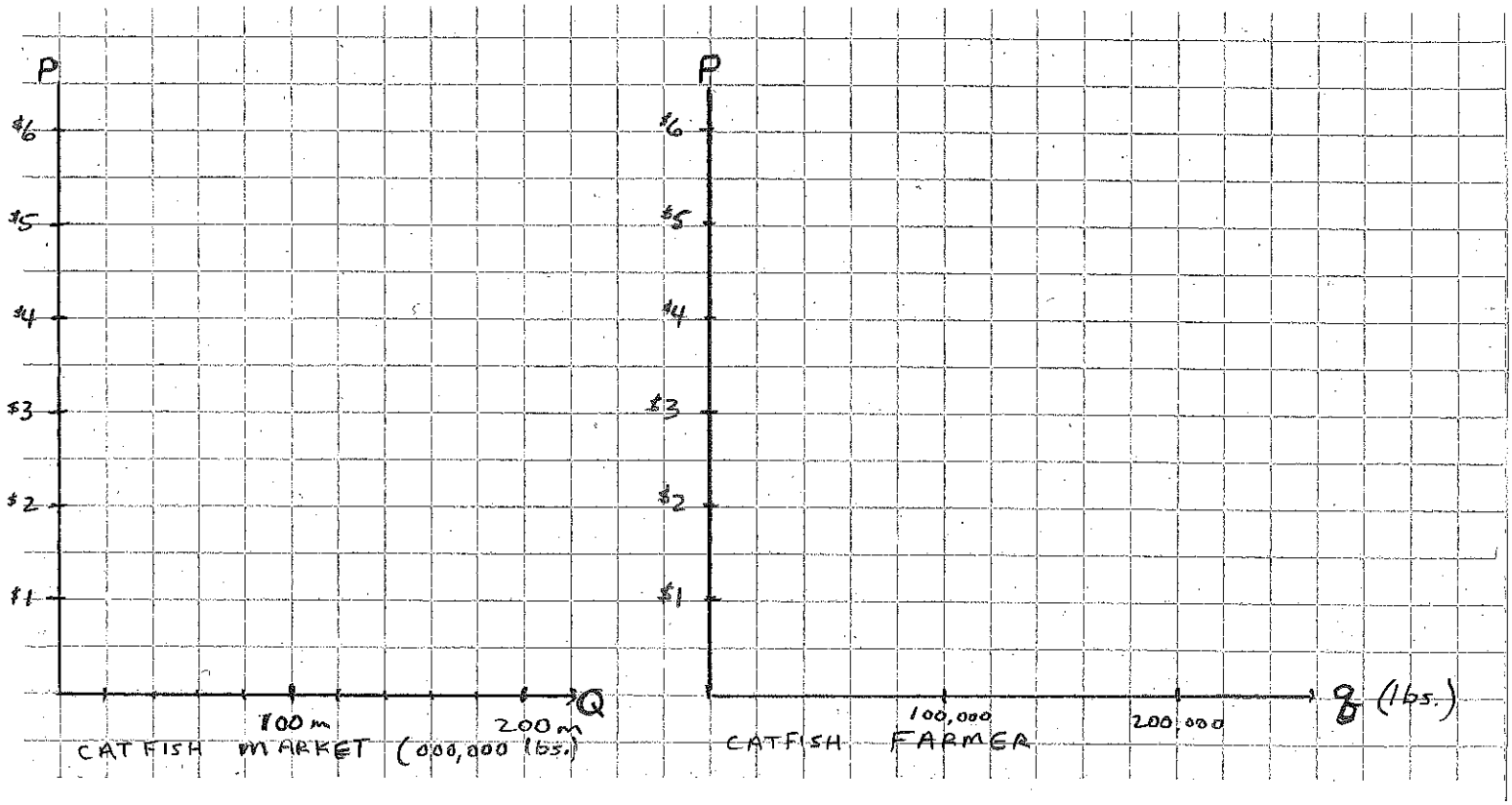
1. (5 pts.) What are the characteristics of the market for charter yachts in Greece? What type of market structure is it?

2. (5 pts.) Market shares for automobile manufacturers in the U.S. are as follows: GM 18%, Ford 15%, Toyota 15%, Chrysler 12%, Honda 10%, Nissan 8%, Hyundai/Kia 8%, Volkswagen 4% and other brands 8%. Calculate the HHI for this industry. In your calculation you should count "other brands" as one company.

3. (5 pts.) In 2015 Pfizer was days away from publicly announcing the price of its new drug Ibrance. It got a surprise. A competitor raised the monthly cost of a rival treatment by $1000. What was Pfizer's response? What illness/malady does Ibrance treat?

4. (25 pts.) It is 2012. You serve as a business consultant to Cracker Barrel Restaurants. One of the biggest-selling items on their menu is fried catfish fillets. Catfish farmers currently sell catfish at $4.00 per pound, and 120 million pounds of catfish are transacted in the U.S. Assume that the market is in long-run equilibrium at that price and output. The typical catfish farmer produces 100,000 pounds of catfish annually.

a) Illustrate the 2012 situation in the diagrams below, using D, S, ATC, MC, and d curves. Roughly how many catfish farmers will exist in this market?



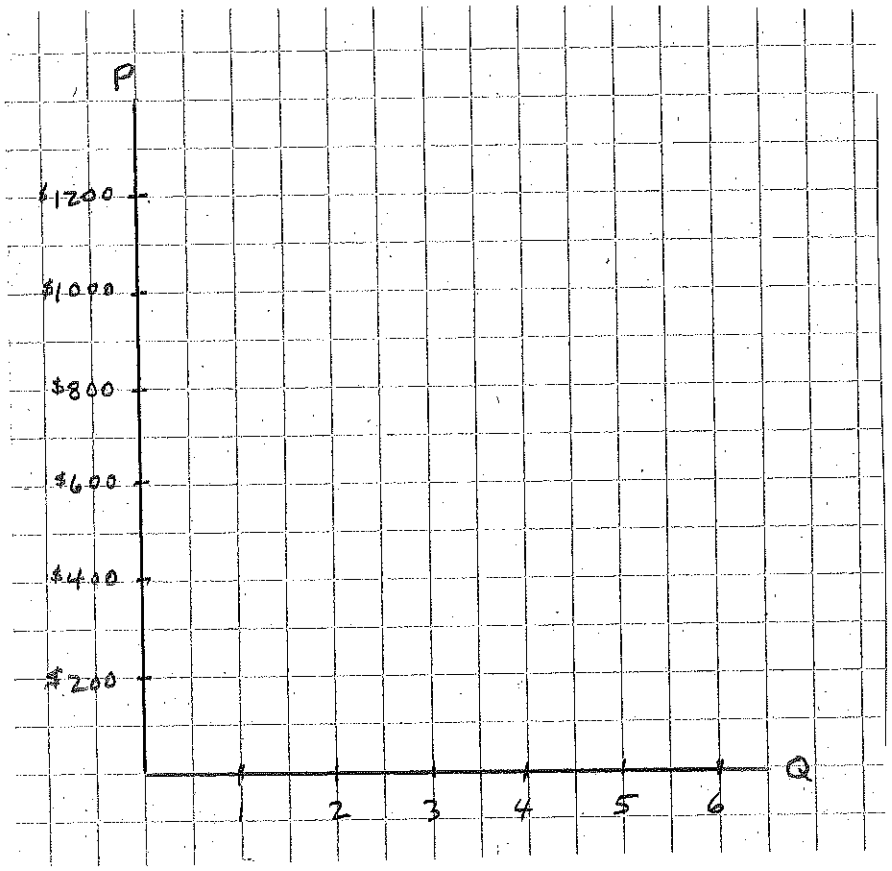
b) One of the biggest expenses in raising catfish is feed. Catfish eat pellets that are a combination of corn, soybeans, and wheat. After years of elevated grain prices, corn, soybean, and wheat prices fall sharply in 2013, reducing the cost of raising catfish by 25%. MES is not affected by this fall in input prices. Explain and illustrate in your diagrams what will happen in the market for catfish. If own-price elasticity of demand for catfish is 1.0, what will happen to market output and the number of catfish farmers?

5. (10 pts.) Briefly explain reasons why a firm might find it advantageous to vertically integrate upstream (Make) rather than acquire an input via market transactions (Buy).

6. (5 pts.) In "Haven't Shareholders Had Enough Chicken," what two companies were involved?

7. (15 pts.) You own and operate the only upscale men's clothing store in town. As such, you have something of a monopoly on expensive men's suits. The demand curve of a typical customer is given by $Q = 5 - P/200$, where Q is quantity demanded and P is the price of a suit in dollars. Your cost function is a simple one, $MC = AC = \$400$ per suit.

a) If you use a simple uniform price strategy, what P and what Q will maximize your profits? What will profits be? Illustrate in the diagram below.



b) Sometimes you wonder if you are gouging your customers as much as is possible, given your unique market position. When shopping one Saturday morning at the local farmers' market, you observe that the only farmer who has fresh cantaloupes uses the following pricing policy: buy one cantaloupe at the regular price and get the second one for **x**% off. You are inspired to revamp your pricing strategy. How would you set the "regular" price and what would the optimal **x** be for you, given your customers' demand for men's suits? What would your profits be? Illustrate in your diagram.

8. (15 pts.) Consider the following two-player game. The strategy options and payoffs for the row and column players are contained in the payoff matrix below:

	C1	C2	C3	C4
R1	**10, 7**	**8, 8**	**0, 6**	**2 ,6**
R2	**6, 5**	**2, 3**	**5, 1**	**7, 4**
R3	**0, 4**	**5, 8**	**3, 7**	**5, 10**
R4	**4, 6**	**9, 8**	**6, 9**	**1, 1**

Using the solution strategies we studied in class (dominant strategies, dominated strategies, rationalizable strategies), find the Nash equilibrium. Explain the sequence of reasoning that you use to arrive at your answer.

9. (15 pts.) Read the attached analysis from last week's WSJ. Several years back China attempted to extract surplus from users of heavy rare-earth metals by leveraging its dominant position in world markets. The article describes what has happened since that time. Use Porter's five forces model to analyze these events in the heavy rare-earth metals industry.

China's Rare-Earths Bust

A new Honda engine shows the limits of Beijing's coercion.

Honda says it has co-produced the world's first hybrid car engine that doesn't use heavy rare-earth metals, allowing it to cut reliance on imports from China. This innovation, to debut in Honda minivans this fall, illustrates how far we've come since the great rare-earths panic of 2010.

Back then, China produced 95% of global rare earths and thought it could hold markets hostage by restricting exports. So it cut export quotas by 40%, partly to push foreign buyers to move factories onshore, and then temporarily blocked shipments to Japan over a territorial dispute in the East China Sea. Prices shot up tenfold as consumers and officials world-wide feared for supplies of 17 obscure elements they learned are used in high-tech gizmos from missiles to smartphones, wind turbines and electric cars.

But no apocalypse was nigh. Beijing's mercantilist gambit had predictable effects—predictable, at least, for anyone familiar with the work of Julian Simon. The economist taught that fears over natural-resource scarcity often underestimate the flexibility of markets and the ingenuity of the human brain, which Simon called the ultimate resource. Those who warned about "peak oil" were blindsided by fracking, and rare-earth doomsayers failed to foresee how Beijing's supply squeeze would spur overseas investment in new supplies and substitutes.

With rare-earth prices high, new mining ventures became economical in Australia and the U.S. Metals firms began recycling more lanthanum, dysprosium and other coveted elements from industrial waste. And companies like Siemens, Samsung and Honda accelerated research on how to use less of the minerals, especially the "heavy" rare earths found overwhelmingly in China. Inside China, high prices led to even more rare-earth mining, despite Beijing's desire to consolidate the industry and curb pollution.

By 2012 a glut of rare earths caused global prices to collapse. Two years later, China failed to export enough even to hit its quotas, which it scrapped last year after losing a case at the World Trade Organization. Mines shut down in China and overseas.

So Honda's new engine should be a helpful reminder. After starting work on replacing rare earths a decade ago, the car giant's apparent turning point was a tie-up with fellow Japanese firm Daido Steel in 2011, prompted by China's squeeze. The result is a new technique for designing crucial engine magnets that avoid heavy rare earths and are 10% cheaper and 8% lighter, Honda says.

There are lessons here for Chinese mercantilists too. Their rare-earths gambit hurt the country diplomatically, stoked a badly polluting domestic industry and spurred technological innovation among rivals. Rare earths can be valuable as exports for tech manufacturers around the world, but as a tool of economic coercion they're a bust.