

ECO 610 Final Exam
Fall 2018

Name: _____
4-digit # _____

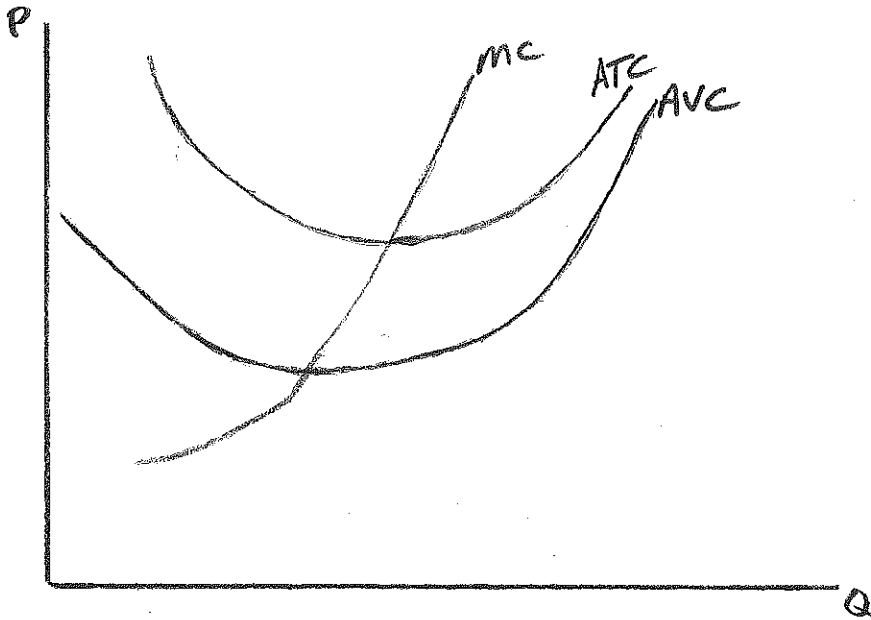
100 points total. Point values for each question are as indicated. Answer each question in the space provided. General advice: show your work, including any formulas or diagrams that you use in reasoning through your answers.

1. (8 pts.) Explain the four different models of market structure that we have studied in the second half of this semester. Briefly describe the defining characteristics of each.

2. (8 pts.) What are the different sources of barriers to entry, and give an example of each.

3. (6 pts.) Explain how Donald Washkewicz caused the market value of Parker Hannifan to increase its share price by 88% from 2001 to 2007.

4. (9 pts.) Shown below are the AVC, ATC, and MC curves for one of several miniature golf courses in a large beach resort. Illustrate and label demand curves consistent with each of the following situations. Briefly explain your answers:
- D_1 : It is wintertime and when we drive by the golf course, a sign says “closed for the season.”
 - D_2 : It is springtime and the golf course is open. The owner tells us that she couldn’t survive if business were like this all year round.
 - D_3 : It is the peak of the season, the parking lot is full, and the owner has a smile on her face.



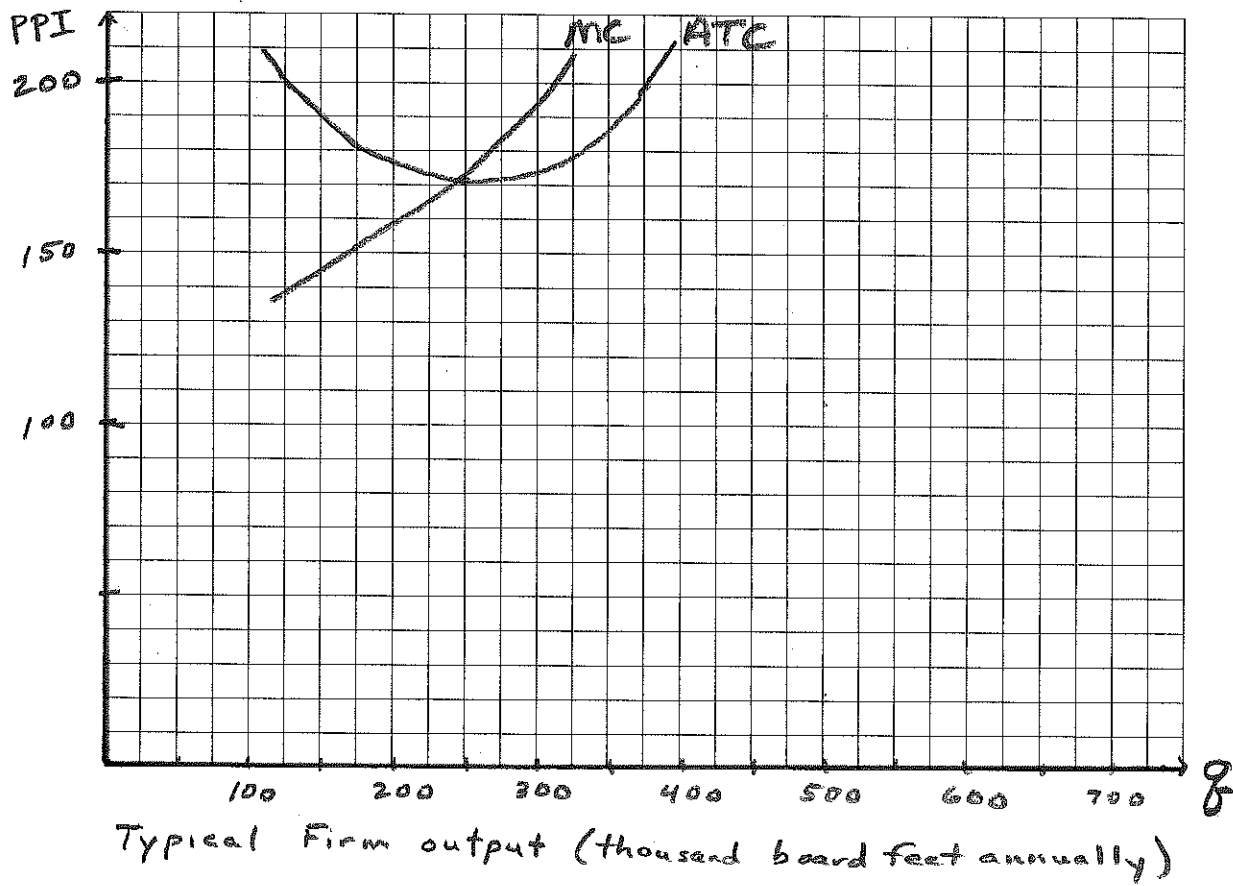
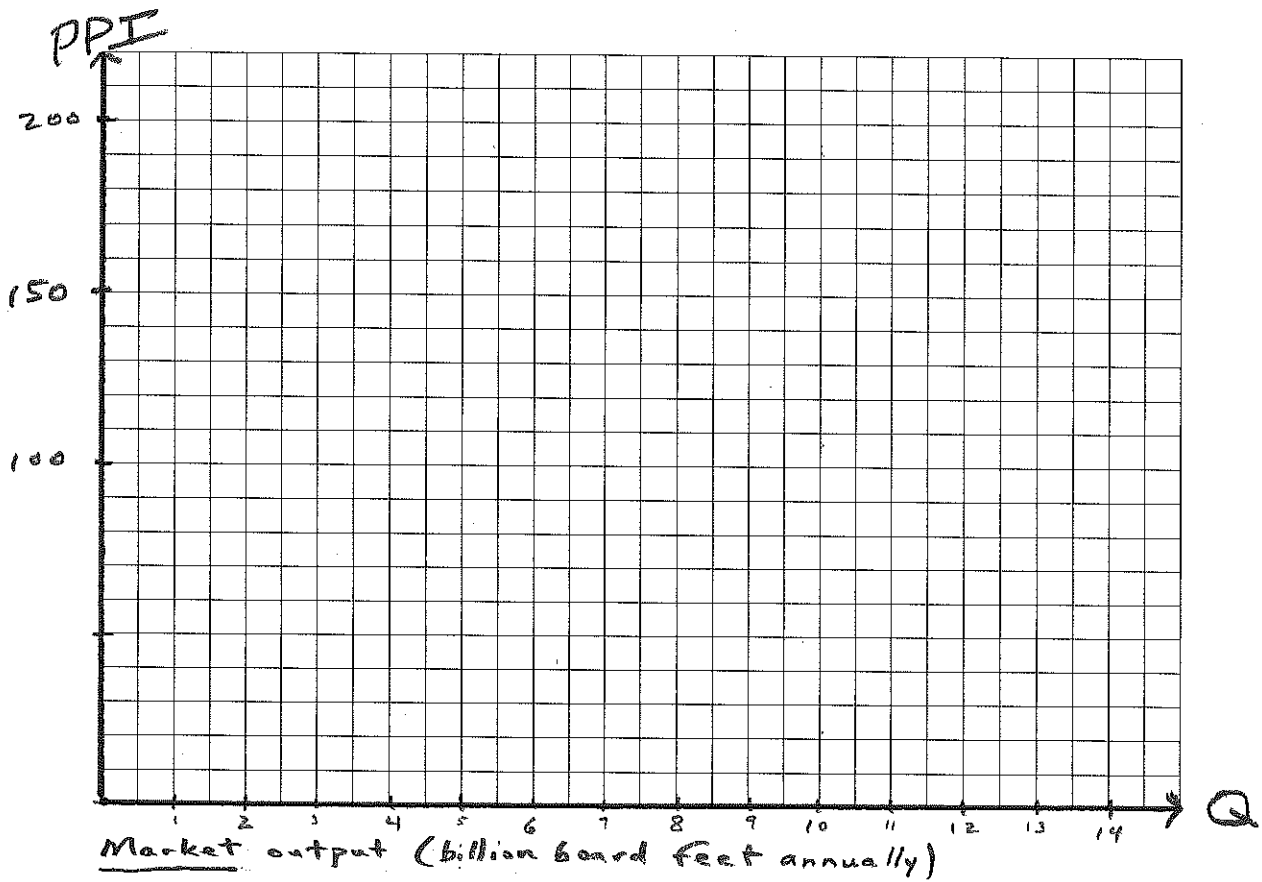
5. (6 pts.) Some questions about price discrimination and whether firms in different situations are or are not able to price discriminate:
- Why are Raywood Stelly and Skeet Rogers not able to charge different prices to different customers for their alligator skins?
 - Bars frequently charge a different cover charge to women than men. Why don’t they charge different prices for a glass of beer to women vs. men?

6. (20 pts.) Oak, maple, and other hardwood trees are grown and harvested in the eastern United States. The lumber from these trees is used to make furniture, cabinets, flooring, and other products. Much of it is used domestically, but a very sizable portion is also exported to other countries. There are many small and medium-sized companies that supply hardwood, with some of the trees being grown on privately owned land and the rest being harvested from national forests. The U.S. Forestry Service keeps track of harvest sizes and also market prices. There is a specific component of the U.S. Producer Price Index devoted to oak and maple hardwood flooring. At this point you should have formed an opinion about what sort of market structure model best fits the market for eastern hardwood lumber. Now for the questions.

(a) In the late 1990's and early 2000's, the U.S. Producer Price Index (PPI) for oak and maple hardwood flooring hovered around 170, some years being a little bit above and other years being a little bit below. The annual harvest size was in the 10-12 billion board feet range. Assume for purposes of answering this question that the market was in long-run equilibrium during this period. Briefly explain below and illustrate in the diagrams on the following page what that means. You should explain and illustrate how market equilibrium is established. You should also explain and illustrate the economic profit situation of a typical hardwood producer. To assist in your answer I have illustrated the cost curves of a typical firm. Denote your answers with (a).

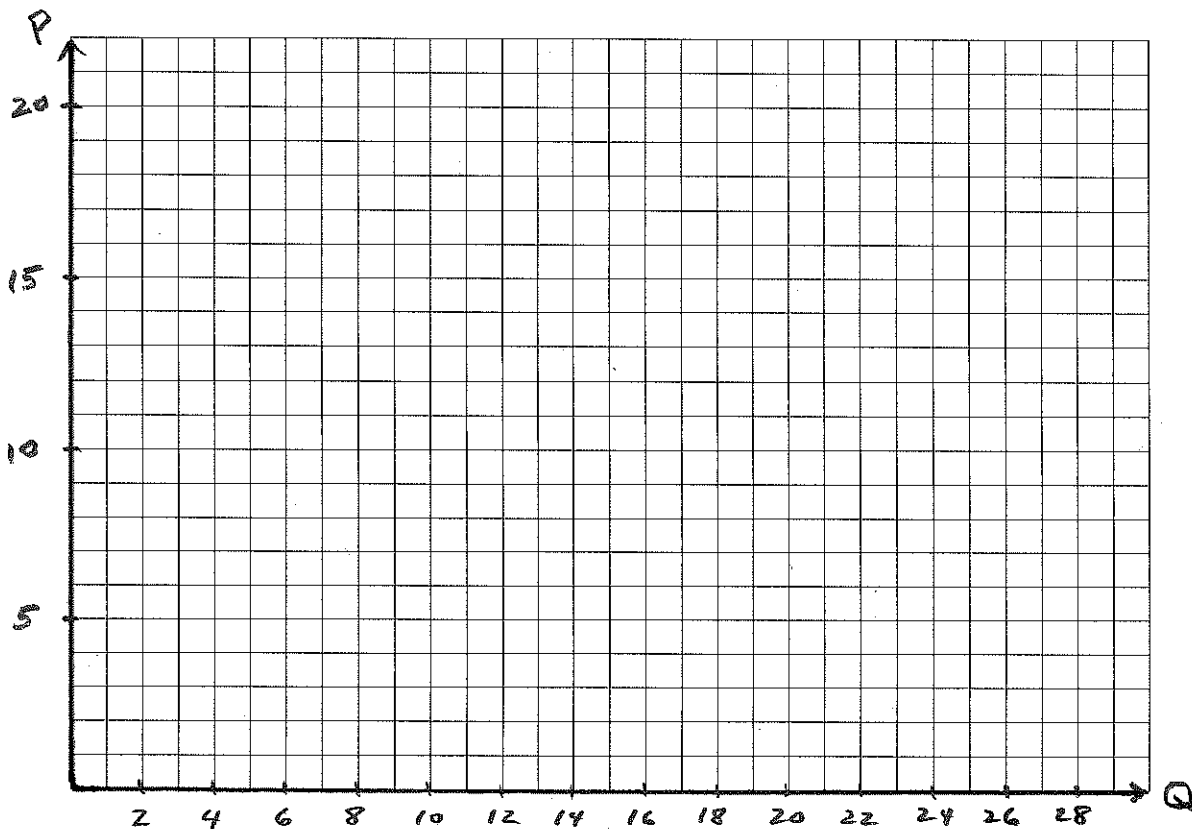
(b) The housing crisis and economic recession that started in 2007-8 knocked the bottom out of the housing market in the U.S. Construction of new houses plummeted. Hardwood lumber is used extensively in new home construction. Market output of hardwood fell to 6-7 billion board feet annually during the 2008-13 period, and the PPI for oak and maple fell to 153 in 2009. Illustrate in your diagrams and denote with (b). Briefly explain.

(c) By 2017 the PPI had returned to 177 and market output was 9 billion board feet, as the U.S. economy pulled out of the recession and housing starts recovered. Illustrate in your diagram and denote with (c), and then explain what was going on at both the market level and at the firm level.



7. (8 pts.) Disneyland Moscow occupies a unique location in product space, just like the other Disney amusement parks around the world. They have determined that there are two primary categories of customers, (1) those who travel some distance to enjoy the park, have high discretionary income, and want to stay multiple days and (2) nearby residents who have lower discretionary incomes and only want to visit the park for a day on infrequent occasions. Disney has set the admission fee for anyone who has a local Moscow driver's license at 100 rubles, while the daily rate for non-locals is 300 rubles. Assume that the marginal cost of serving an additional customer in the park is 50 rubles. Calculate the own-price elasticity of demand for each type of customer, assuming that Disney has figured out the entry fees that maximize profits. Explain how you arrive at your answer. What type or category of price discrimination is this?

8. You live on a small island in the Aegean Sea. The island has considerable tourist potential, except that it only gets ferry service once a week. You have done research on tourism for similar Greek islands, and you have estimated that demand for hotel rooms on this island would be $Q = 20 - P$, if only the ferry came every day instead of once per week. Q is the number of hotel rooms demanded by tourists each night, and P is the price in euros per room. Assume that marginal costs are constant at 4 euros per room per night ($MC=AC=4$).
- a) (10 pts.) Suppose that the Blue Star Ferry Line announces that it will begin providing daily service to your island. If you could be guaranteed a monopoly position in this market (not outside the realm of possibility since the island governing council is dominated by your close relatives), how big of a hotel would you build, i.e. how many rooms? Hint: calculate the profit maximizing price and quantity. What would your profits be? Illustrate in the diagram below.



- b) (10 pts.) Now suppose that the island governing council decides to grant operating licenses to two hotels, yours and one proposed by your cousin. You have never been able to fully trust your cousin, and now you are aligned against him in a simultaneous-move game—you both have to decide how much capacity (how many rooms) to build into your hotels. You have narrowed your viable choices to 4, 6, or 8 rooms. Your cousin has the same options in building his hotel. The following payoff matrix lays out the possible strategies and payoffs:

		You		
		Q = 4	Q = 6	Q = 8
Your cousin	Q = 4	32, 32	20, 36	16, 32
	Q = 6	36, 20	24, 24	12, 16
	Q = 8	32, 16	16, 12	0, 0

If you and your cousin each have to make your capacity choice simultaneously, what will be the likely outcome of this game? Explain your reasoning.

- c) (10 pts.) Instead of you and your rival moving simultaneously, suppose instead that your cousin is getting his MBA in the U.S.A. and won't be home to start his hotel for another year. So you have the opportunity to make your capacity choice and build your hotel before he gets back, and then he will make his capacity decision second after you have made the first move. Based on the information in the above payoff matrix, write out the game tree for this sequential-move game. What will be the outcome of the game? Explain the solution concepts you use in arriving at your answer..

- d) (5 pts.) Draw the profit possibilities frontier for this market in the diagram below, where your cousin's profits are measured on the vertical axis and your profits are measured on the horizontal axis. Illustrate the three possible outcomes you have just analyzed in your diagram.

