

Questions 1-8: multiple choice, 4 points each, circle correct answer.

1. Which of the following is not a principal source of superior profit performance:
- a) Protected environments where entry is difficult.
 - b) Companies that possess a sustainable competitive advantage over rivals.
 - C** c) Commodity markets where product differentiation is not a factor.
 - d) Companies that anticipate market changes and exploit new opportunities.
2. Return on sales
- A** a) Will normally be higher in more capital-intensive industries.
 - b) Will normally be higher in less capital-intensive industries.
 - c) Tends to equalize across firms in different industries over time.
 - d) Can be used to determine whether economic profits are being earned.
3. The four producers of glockenspiels have market shares of 40%, 30%, 20%, and 10%. The Herfindahl-Hirschman Index (HHI) for this industry is:
- D** a) 100
 - b) 1000
 - c) 1500
 - d) 3000
- $$HHI = \sum_{i=1}^n s_i^2 = 40^2 + 30^2 + 20^2 + 10^2$$
4. Between Gillette Mach III razor handles and razor blades we would expect to find a cross-price elasticity of demand equal to:
- D** a) 5.0
 - b) 0.5
 - c) -0.5
 - d) -5.0
- very close or strong complements*
5. Buyer power is likely to be a more important force in constraining the profitability of firms in an industry if:
- A** a) Buyers can easily integrate backwards (upstream).
 - b) Buyers are atomistic.
 - c) Information about transactions is hidden.
 - d) Sellers' products are highly differentiated.
6. Entrants are likely to be at a competitive disadvantage relative to incumbents in each of the following situations except
- A** a) There are learning curve effects where the information is a public rather than private good.
 - b) Incumbents have developed strong brand loyalty among customers.
 - c) Buyers have locked into long-term contracts to purchase from existing sellers.
 - d) New firms must go through a complicated licensing process prior to entry.

7. A critical strategic move in Cortez's military campaign against the Aztec Empire was:

C

- a) When he fired his cannon and sunk the Aztec war canoes.
- b) When he adopted trench warfare methods in the siege of the Aztec capital.
- c) When he burned all but one of his ships after landing his troops on the beach.
- d) When he charged his mounted cavalry into the Aztec warriors.

8. Price cutting is less attractive as a competitive strategy:

A

- a) For a dominant firm than for small fringe competitors.
- b) For a firm with a cost advantage.
- c) For firms with excess capacity.
- d) The more elastic is market demand.

9. (4 pts.) What is the key element in defining the product and geographic dimensions of a market?

Sensitivity to price. If Lexington Honda dealers raise their prices slightly, and consumers respond by traveling to Frankfort to check out prices there, then we would say that Lexington and Frankfort are in the same geographic market. Similar reasoning would apply to determining whether Toyota Camrys and Honda Accords are in the same product market.

10. (8 pts.) What two factors will firms take into account when determining how broad or narrow a product line to offer?

If consumers' tastes or preferences are diverse, i.e. they are spread out over product space, then firms will tend to offer broader product lines.

If there are significant economies of scale in producing a single product, then producers will tend to offer a narrower product. Economies of scope across products also argues for a broader product line.

11. (9 pts.) Give an example of each of the different types of price discrimination.

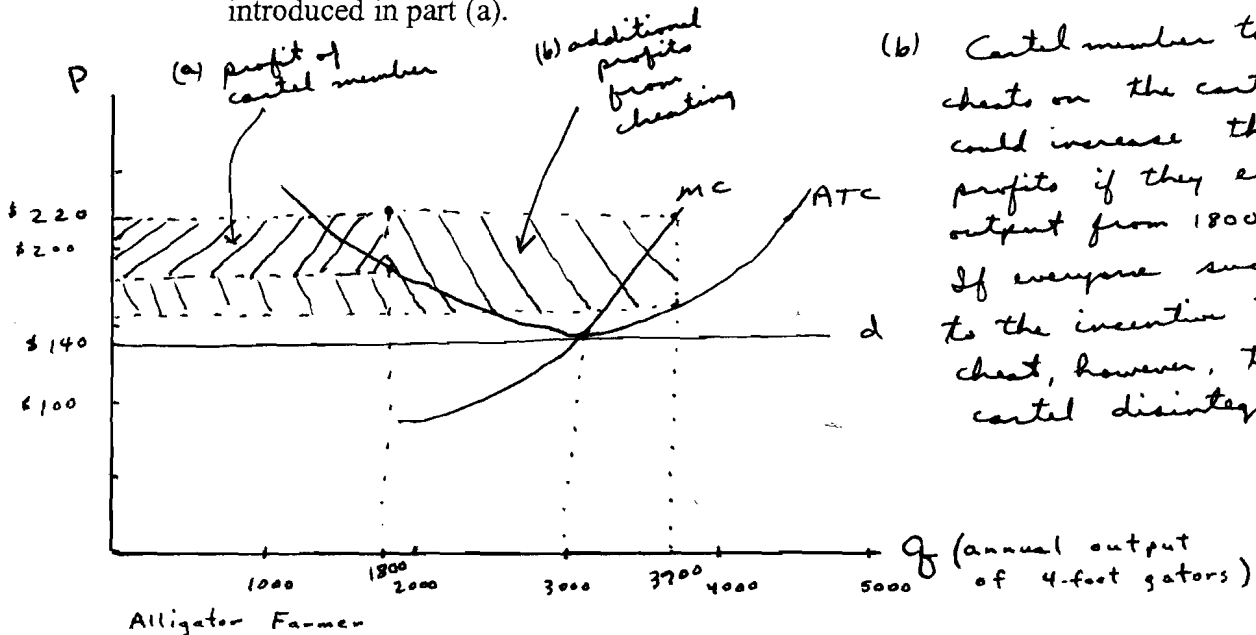
1st degree: automobile dealer who negotiates a separate price with each individual customer.

2nd degree: quantity discounts, such as those offered by cell phone suppliers.

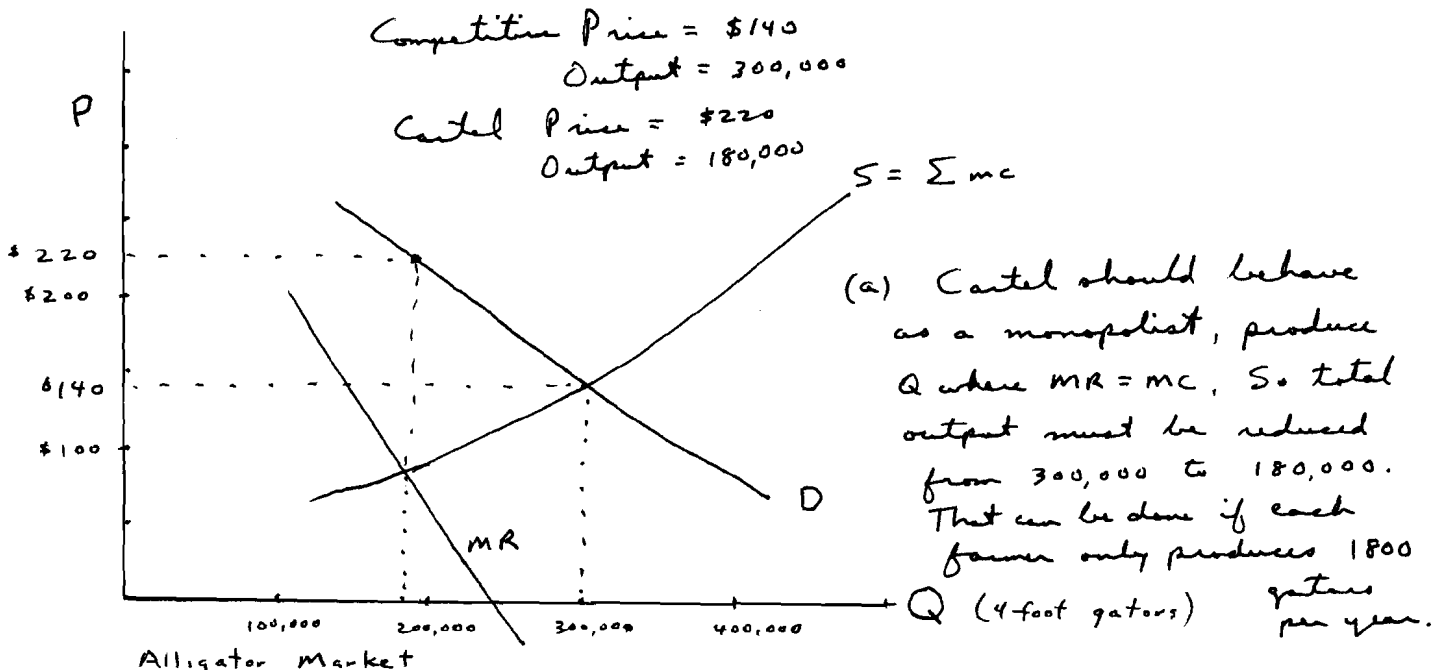
3rd degree: market separation, such as airlines charging a lower price to passengers who are willing to stay over Saturday night.

12. (12 pts.) The American Alligator Association is a trade group that represents all of the alligator farmers in America. Currently there are 100 members. Right now, the industry is in long-run equilibrium, with the typical farm producing 3000 four-foot gators per year. Market price for a four-foot gator is \$140. As president of AAA, you see an opportunity for alligator farmers to increase their profits. Next month the association is having its annual convention in Baton Rouge, and every alligator farmer in the country will be present. You would like to make a presentation to the group and explain how they can each make above-normal profits if they will cooperate and act in unison, rather than competing so vigorously with one another.

- Using diagrams for the alligator market and for a representative firm, explain how an alligator cartel could accomplish this.
- What are the long-run prospects for such a cartel, assuming that it is initially successful? Explain your reasoning using the same diagrams that you introduced in part (a).



(b) Cartel member that cheats on the cartel could increase their own profits if they expand output from 1800 to 3700. If everyone succumbs to the incentive to cheat, however, the cartel disintegrates.

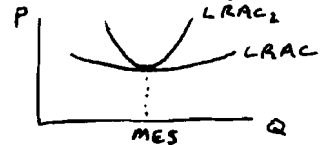


(a) Cartel should behave as a monopolist, produce Q where $MR = MC$, so total output must be reduced from 300,000 to 180,000. That can be done if each farmer only produces 1800 gators per year.

13. (8 pts.) Two brief questions about entry:

- a) Why is entry more likely if the LRAC is a flat U-shape rather than a steep U-shape?

Small scale entry is more feasible if the LRAC curve is flatter because smaller firms are at a lesser cost disadvantage relative to larger firms.



- b) What gives rise to exit barriers and why does that deter entry?

Irreversible investments give rise to sunk costs, which cannot be recovered if the firm is unsuccessful and exits the industry. Knowing that, firms will be more cautious about entering an industry where significant irreversible investments must be made.

14. (12 pts.) One large pig and one small pig are placed in a box. At one end is a lever which when pressed causes a dispenser at the other end of the box to release ten units of food. The effort expended in pressing the lever costs each pig two units. If the small pig presses the lever, the big pig eats nine units of food and only one unit is left for the small pig, so the small pig receives a payoff of -1 units. If the big pig presses the lever, the small pig can consume four units of food by the time the big pig has crossed the box. If both pigs press the lever, the small pig can get to the food first, but can only consume three units of food by the time the big pig arrives and shoves it aside. If neither pig presses the lever, each gets zero.

- a) Illustrate the payoff matrix for this game.
 b) What do you predict will be the outcome and why?
 c) Is your predicted outcome a Nash equilibrium? Explain why or why not.

(a)

		Big Pig	
		<i>Press</i>	<i>Don't Press</i>
Small Pig	<i>Press</i>	1, 5	-1, <u>9</u>
	<i>Don't Press</i>	<u>4</u> , <u>4</u>	<u>0</u> , 0

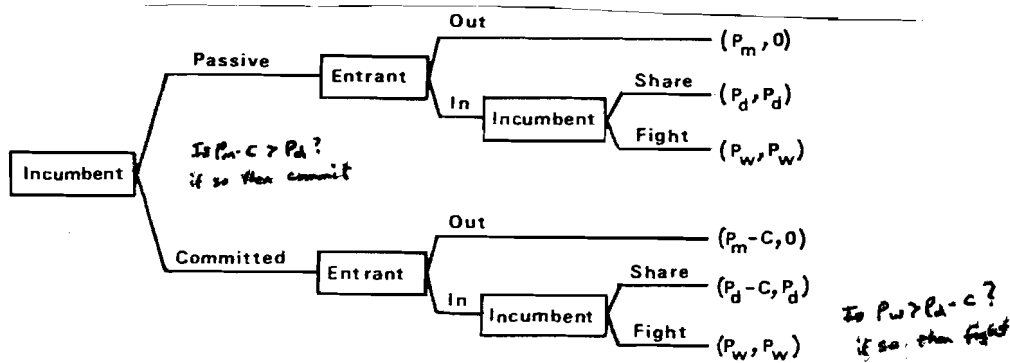
(b) *The small pig is better off not pressing the lever, regardless of what the big pig does. Hence that is the small pig's dominant strategy. Given that the small pig doesn't press, the big pig is better off pressing the lever, which results in a payoff of 4 units of food for each pig.*

(c) *The strategy pair where the small pig doesn't press and the big pig presses is a Nash equilibrium, because each pig's chosen strategy is the best response that it could make, given the strategy chosen by the other pig.*

15. (15 pts.) An incumbent monopolist earns economic profits, the present discounted value of which are Π_m . Another firm is considering entering the monopolist's market. If the monopolist reacts to entry by initiating a price war, both the monopolist and the entrant would suffer losses of Π_w . If the monopolist accommodates entry and shares the market, both would earn duopoly profits of Π_d . The monopolist has the option of undertaking an irreversible action right now in preparation to fight a price war if entry does in fact occur. This undertaking would cost C dollars and would reduce the monopolist's return by that amount if a price war is not fought, but would not affect the monopolist's return if a price war is fought.

- Illustrate the possibilities with a game tree.
- Suppose $\Pi_m = \$20$, $\Pi_d = \$10$, $\Pi_w = -\$1$, and $C = \$12$. Should the monopolist commit? If it does, is its threat to fight a price war credible? What will be the outcome of the game?
- Suppose $\Pi_m = \$24$, $\Pi_d = \$10$, $\Pi_w = -\$4$, and $C = \$12$. Should the monopolist commit? If it does, is its threat to fight a price war credible? What will be the outcome of the game?

(a)



(b) If $\Pi_m - C < \Pi_d$, then don't commit. Since $20 - 12 < 10$, don't commit.
 If $\Pi_w < \Pi_d - C$, then threat to fight a price war is not credible. Since $-1 > 10 - 12$, fighting a price would ^{be a} credible threat.
 Since both conditions are not met, the outcome of the game will be that the incumbent monopolist will not commit, entry will occur, and the incumbent monopolist will accommodate entry.

(c) If $\Pi_m - C < \Pi_d$, then don't commit. Since $24 - 12 < 10$, commit.
 If $\Pi_w < \Pi_d - C$, then threat to fight a price war is not credible. Since $-4 < 10 - 12$, fighting a price would not be a credible threat.
 Since both conditions are not met, the outcome of the game will be that the incumbent monopolist will not commit, entry will occur, and the incumbent monopolist will accommodate entry.