ECO 411
Final Exam
Spring 2009

Name: _____ KEY _____

If you want your grade posted on the web
site, provide a 4-digit number: _____

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

C

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) Commodity markets where product differentiation is not a factor.
    d) Companies that anticipate market changes and exploit new opportunities.

A

2. Return on sales
    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.

D

3. The four producers of glockenspiels have market shares of 40%, 30%, 20%, and 10%.
   The Herfindahl-Hirschman Index (HHI) for this industry is:
    a) 100
    b) 1000
    c) 1500
    d) 3000

$$HHI = \sum_{i=1}^{m} S_i^2 = 40^2 + 30^2 + 20^2 + 10^2 = 3000$$

D

4. Between Gillette Mach III razor handles and razor blades we would expect to find a
   cross-price elasticity of demand equal to:
    a) 5.0          c) -0.5
    b) 0.5          d) -5.0

A

5. Buyer power is likely to be a more important force in constraining the profitability of
   firms in an industry if:
    a) Buyers can easily integrate backwards (upstream).
    b) Buyers are atomistic.
    c) Information about transactions is hidden.
    d) Sellers' products are highly differentiated.

A

6. Entrants are likely to be at a competitive disadvantage relative to incumbents in each of
   the following situations except
    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.

C

7. A critical strategic move in Cortez's military campaign against the Aztec Empire was:
    a) When he fired his cannon and sank 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) 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. (12 pts.) Pick any three factors (of the eight or nine factors we discussed in class) that facilitate cooperation among rival firms in a market and explain why each one might serve to soften competition.

   ① small number of sellers
   ② large number of buyers
   ③ homogeneous product
   ④ similar cost structures
   ⑤ inelastic demand
   ⑥ frequent interactions
   ⑦ publicly available information
   ⑧ high barriers to entry

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

   1) Differentiated consumer tastes or preferences encourage greater product variety and differentiation.

   2) To the extent there are economies of scale in production, increasing product variety will be costly.

11. (8 pts.) Explain what a search good is. Explain what an experience good is. Give an example of each.

- search good - consumer can determine what the consumption experience will be like without actually having to purchase and consume the good.
  ex. buying a pair of shoes, buying fresh flowers

- experience good - consumer has to actually purchase and consume the good in order to know how much utility will be received.
  ex. trying out a new restaurant, going to a movie,

12. (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?

A small-scale entrant is at a much smaller cost disadvantage if the LRAC is flat.
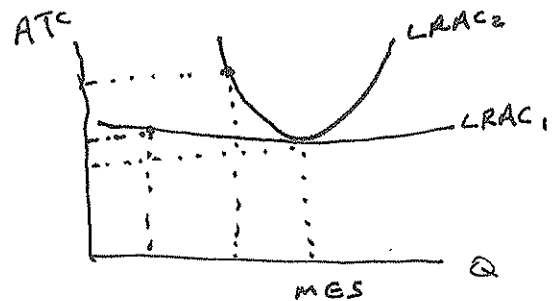


b) What gives rise to exit barriers and why does that deter entry?

Fixed irreversible investments that, once made, become sunk costs, give rise to exit barriers. There is no opportunity cost of staying put, since these assets cannot be transferred to another use. Knowing that ex ante, firms will be less likely to enter and incur these sunk costs.

13. (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.

a) Using diagrams for the alligator market and for a representative firm, explain how an alligator cartel could accomplish this.

b) 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).



Representative alligator farmer

Market for 4-foot alligators
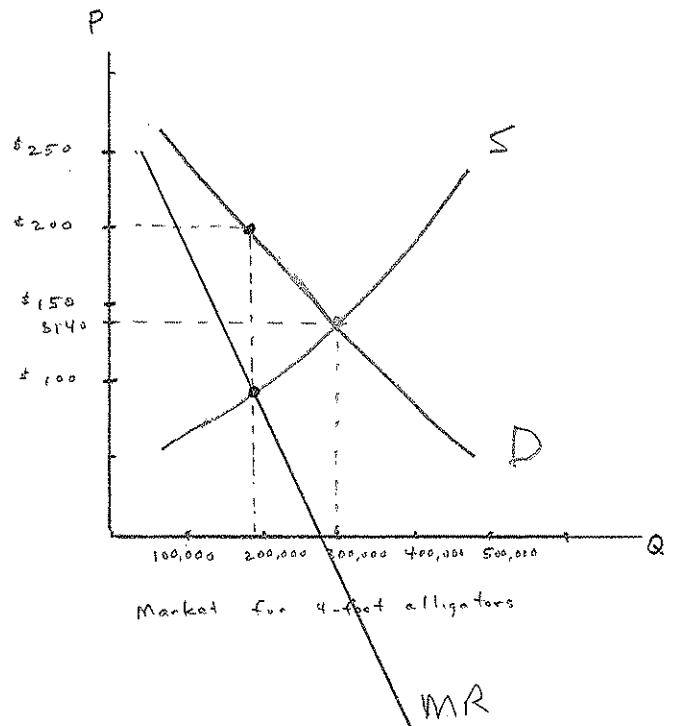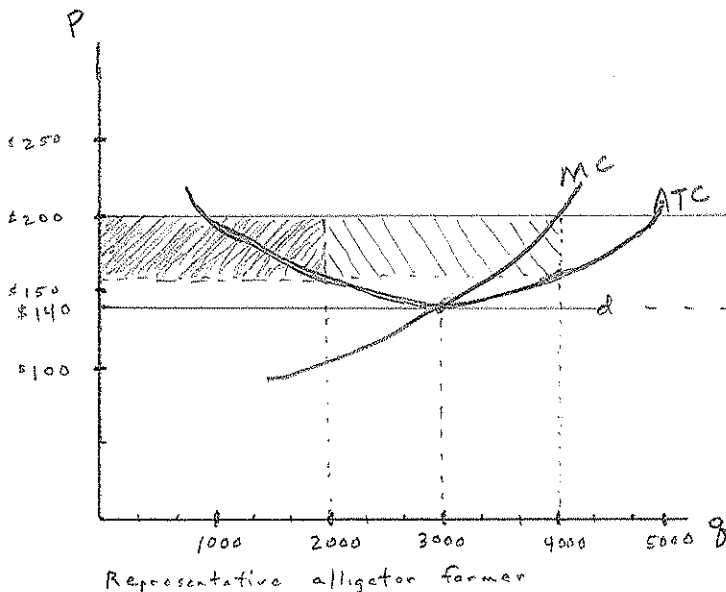
(a) competitive price = $140
    profit = 0
    cartel price where mR = mc
    P ≈ $200, profit = ▮▮▮▮
    But this requires all 100 alligator farmers to reduce their own output from 3000 to roughly 2000 gators per year. This would drive the market price up from $140 to $200.

(b) If one alligator farmer wants to cheat on the cartel, she could roughly double her profits (in this illustration) by increasing her annual output to 4000 gators per year. By herself she would not affect market price, but since everyone has the same incentive the cartel may fall apart.

14. (8 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?

(a)

Big Pig

|  | | press lever | don't press lever |
|---|---|---|---|
| Small Pig | press lever | 1, 5 | -1, [9] |
| | don't press lever | (4), [4] | (0), 0 |

(b) The small pig has a dominant strategy –
don't press the lever.  Realizing this,
the big pig's best response is to
press the lever, and each will
end up with net payoffs of 4 and 4.

15. (12 pts.) An incumbent monopolist earns economic profits, the present discounted value of which are $\Pi_m$. 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 $\Pi_w$. If the monopolist accommodates entry and shares the market, both would earn duopoly profits of $\Pi_d$. 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.
   a) Illustrate the possibilities with a game tree.
   b) 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?
   c) 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) Is $\Pi_m - C > \Pi_d$ ?
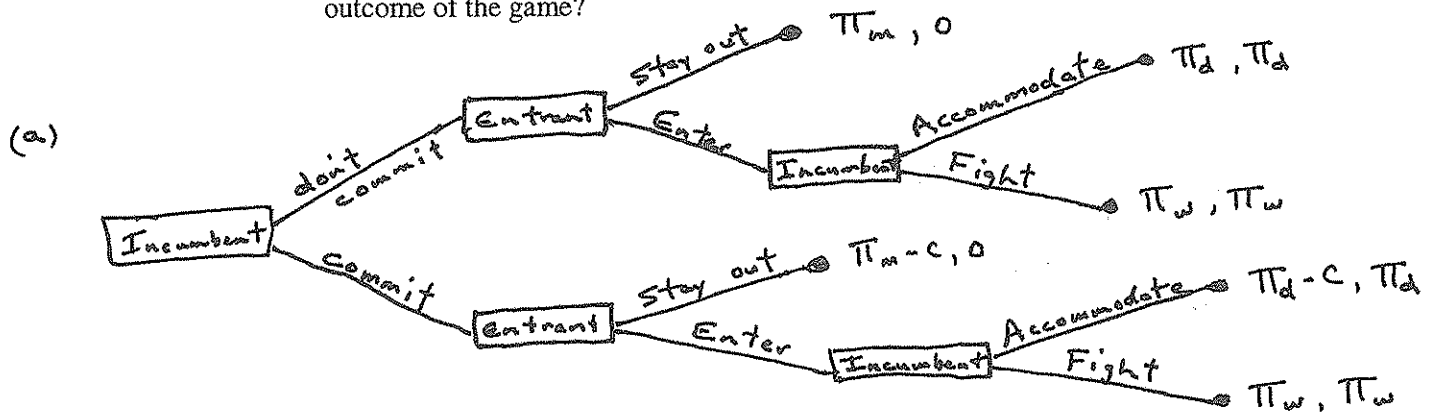
$20 - 12 > 10$ ?  NO

Is $\Pi_w > \Pi_d - C$ ?

$-1 > 10 - 12$ ?  YES

Threat to fight a price war is credible, but it is more profitable not to commit. So don't commit.

(c) Is $\Pi_m - C > \Pi_d$ ?

$24 - 12 > 10$ ?  YES

Is $\Pi_w > \Pi_d - C$ ?

$-4 > 10 - 12$ ?  NO

It is more profitable to commit, but the threat to fight a price war is not credible, so entry would occur. So don't commit.