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| Regulation & Antitrust Policy (Econ 180) | Signature: |  |
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**QUIZ #9 VERSION A**

**"Monopolization and Price Discrimination"**

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Numerical answers, if rounded, must be correct to at least 3 significant digits. Point values for each question are noted in brackets.

**I. Multiple choice:**  Circle the one best answer to each question. [2 pts each: 20 pts total]

(1) To be convicted of violating the Sherman Act Section 2, firms must possess monopoly power and

1. enjoy above-normal profit.
2. have lower cost than any potential rival.
3. show intent to monopolize a market.
4. have higher cost than any potential rival.

(2) To determine whether a firm possesses monopoly power, the courts most often use

1. the Lerner index.
2. the Bain index.
3. the number of other firms in the market.
4. market share.

(3) John McGee’s (1958) influential study of the Standard Oil case argued that predatory pricing as a means for driving out rivals is generally

1. effective but welfare-reducing.
2. unprofitable.
3. cheaper than merging with rivals.
4. widespread.
5. all of the above.

(4) According to the Areeda-Turner (1975) rule, a firm should be presumed to be engaging in predatory pricing if its price is less than its

1. average variable cost.
2. average fixed cost.
3. average total cost.
4. marginal cost

(5) According to several recent Supreme Court cases, conviction for predatory pricing now requires evidence of

1. high market concentration.
2. pricing below cost.
3. entry barriers.
4. all of the above.

(6) Suppose everyone likes to use the same word processor that everyone else is using. Then the market for work processors is characterized by

1. predation.
2. economies of scale.
3. economies of scope.
4. network externalities.
5. collusion.

(7) According to the "essential facilities" doctrine, a company is guilty of monopolization if one can show all of the following, *except*

1. control of the facility by a monopolist.
2. a difference in price between the monopolist and the competitor.
3. the competitor's inability to duplicate the facility.
4. denial of use of facility to the competitor.
5. the feasibility of providing the facility to the competitor.

(8) Suppose demand for a particular software product is *more elastic* among teachers than among business persons. The software maker wants to maximize profit. If the software maker can set different prices for each market segment, then

1. teachers should get the lower price.
2. business persons should get the lower price.
3. both segments should get the same price, because the marginal cost is the same.
4. cannot be determined from information given.

(9) Compared to single-price monopoly, market-segmenting price discrimination

1. always increases social welfare.
2. always decreases social welfare.
3. results in no change in social welfare.
4. may increase or decrease social welfare.

(10) The Robinson-Patman Act was passed in 1936 to protect

1. large chain stores.
2. small independent retailers.
3. manufacturers.
4. consumers.
5. all of the above.

**II. Problems:** Insert your answer to each question below in the box provided. Use margins and graphs for scratch work⎯only the answers in the boxes will be graded. Work carefully⎯partial credit is not normally given for questions in this section.

(1) [Cases: 10 pts] Consider the following list of important cases:

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| * Standard Oil v. U.S. (1911).
* U.S. v. U.S. Steel (1920).
* U.S. v. Alcoa (1945).
* U.S. v. United Shoe Machinery (1953).
 | * U.S. v. Grinnell Corps (1966).
* Utah Pie v. Continental Baking (1967).
* Berkey Photo v. Kodak (1979).
* MCI v. AT&T (1982).
 |

Complete each sentence below with the appropriate case from this list.

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| a. One remedy for monopolization is to break up the firm, as was done in the case of |  |
| b. The Supreme Court stated that "the law does not make mere size an offense" in the case of |  |
| c. The Seventh Circuit Court articulated the "essential facilities" doctrine in the case of |  |
| d. The Supreme Court often makes the mistake of “protecting competitors instead of protecting competition,” according to Justice Potter Stewart's dissenting view in the case of  |  |
| e. A Circuit Court decision admitted the right of a dominant firm to “compete aggressively” in the case of  |  |

(2) [Market-segmenting price discrimination: 6 pts] Suppose an airline enjoys monopoly power on a particular route. Marginal cost per passenger is $40. The elasticity of demand by business travelers is -3. The elasticity of demand by tourists is -6.

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| a. Compute the profit-maximizing price for tickets sold to business travelers. | $ |
| b. Compute the profit-maximizing price for tickets sold to tourists. | $ |

(3) [Predatory pricing: 33 pts] Red Company and Green Company are both present in Market A. In addition, Red Company is already present in Market B. Green Company may decide to enter Market B, but entry will cost Green Company some start-up costs (for advertising, etc.). The time line for the firms' interaction is as follows.

Both companies set quantities in Market A.

Company(s) set quantities in Market B.

Green Company decides whether to enter Market B.

The demand curve for each market is **P = 20 – (Q/5).** For both companies, marginal cost is constant and equal to average cost. For Green Company, marginal cost is **$ 2**. However, Green Company is unsure whether Red Company’s marginal cost is **$ 2** or **$ 8**.

If both firms’ marginal costs are $2, then the symmetric Cournot duopoly equilibrium is qRed = qGreen = 30.

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| a. Compute the Cournot duopoly price in this case. | $ |
| b. Compute Green Company’s profit in Market B in this case, ignoring start-up cost. | $ |

If instead Red Company’s marginal cost is $8, then the asymmetric Cournot duopoly equilibrium is qRed = 10 and qGreen = 40.

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| c. Compute the Cournot duopoly price in this case. | $ |
| d. Compute Green Company’s profit in Market B in this case, ignoring start-up cost. | $ |

Suppose Green Company believes there is a 50% chance that Red Company’s marginal cost is $2, and a 50% chance that Red Company’s marginal cost is $8.

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| e. Compute Green Company’s expected profit in Market B, ignoring start-up cost. | $ |
| f. If the start-up costs of entering Market B are **$ 300** , should Green Company enter Market B if it is uncertain of Red Company’s marginal cost? Answer “Yes” or “No.” |  |

Now in fact, Red Company’s marginal cost and average cost are both $8, though Green Company does not know this.

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| g. Compute Red Company’s total combined profit in both Markets A and B from simply playing each market as an asymmetric Cournot duopoly. | $ |

Suggest an alternative strategy for Red Company that will generate higher total profit.

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| h. What quantity should Red Company produce in Market A—30 or 10? |  |
| i. What quantity should Red Company produce in Market B? |  |
| j. Compute Red Company’s total combined profit in both Markets A and B. | $ |
| k. Explain why this strategy works. |  |
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(4) [Perfect price discrimination: 26 pts] Suppose Big Company is a monopoly and faces the demand, marginal cost, and average cost curves shown below.

First, assume that Big Company must set a single price for all customers.

 a. Using a straightedge, draw and label Big Company's marginal revenue curve on the graph above.

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| b. What price will Big Company set to maximize profit? [Hint: Sketch Big Comopany's MR curve.] | $ |

Alternatively, assume that Big Company can set a different price for each unit sold, according to buyers' willingness to pay. That is, assume that Big Company can engage in perfect ("first-degree") price discrimination.

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| c. What is the highest price Big Company will set? Give an answer to the nearest whole dollar. | $ |
| d. What is the lowest price Big Company will set? Give an answer to the nearest whole dollar. | $ |

Compare these two situations by computing the following.

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|  | *Single-price monopoly* | *Perfect price discrimination* |
| e. Quantity produced. | thousand | thousand |
| f. Total revenue. | $ thousand | $ thousand |
| e. Total cost. | $ thousand | $ thousand |
| f. Total profit. | $ thousand | $ thousand |
| e. Consumer surplus. | $ thousand | $ thousand |

**III. Challenge question:** Write a one-paragraph essay answering the following question. [5 pts]

In the late 1990s, Microsoft's Internet Explorer competed in the web-browser market against Netscape's Navigator. (Apple Safari, Mozilla Firefox, and Google Chrome did not yet exist). Netscape Navigator was initially priced at about $40. Then Microsoft began giving away Internet Explorer for free. Was this a simple case of predatory pricing? Why or why not? [Hint: What is the current price of Internet Explorer?]

[end of quiz]