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| Regulation & Antitrust Policy (Econ 180) | Signature: |  |
| Drake University, Spring 2011  William M. Boal | Printed name: |  |

**QUIZ #4 VERSION A**

**"Monopoly and Introduction to Antitrust"**

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Mobile phones or other wireless devices are NOT permitted. Points will be subtracted for illegible writing or incorrect rounding. Point values for each question are noted in brackets.

**I. Multiple choice:**  Circle the one best answer to each question. [2 pts each: 14 pts total]

(1) An industry is a natural monopoly if

1. the industry became a monopoly without government interference.
2. the only seller in the market sells a natural or "green" product.
3. one firm owns all the key natural resources required to produce the product.
4. a firm’s average cost is negatively related to its quantity.

(2) Suppose the market price of a certain product is $5. If the market for this product is a monopoly, the seller’s marginal revenue is

1. equal to $5.
2. greater than $5.
3. less than $5.
4. $5 times the quantity sold.

(3) Suppose a sandwich vendor with market power is now selling 10 sandwiches per hour at a price of $5. If she cuts the price to $4.75, she can sell one more sandwich per hour (that is, a total of 11 sandwiches per hour). The vendor's marginal revenue for the 11th sandwich is therefore

1. $0.25 .
2. $2.25 .
3. $2.50 .
4. $4.75 .
5. $5.00 .
6. $9.75 .

(4) If a profit-maximizing firm faces a downward sloping demand curve for its product, it will set a price

1. equal to marginal cost.
2. greater than marginal cost.
3. less than marginal cost.
4. less than or greater than marginal cost, depending on the elasticity of demand.

(5) The "Structure-Conduct-Performance" paradigm is simplistic because it assumes that

1. performance does not depend on structure.
2. performance does not depend on conduct.
3. structure does not depend on conduct.
4. conduct does not depend on structure.

(6) What organizations are *not* exempt from U.S. antitrust law?

1. agricultural cooperatives.
2. software companies.
3. labor unions.
4. export associations.

(7) U.S. antitrust laws are enforced through

1. lawsuits brought by private parties claiming damages.
2. orders of the Federal Trade Commission.
3. prosecution in federal court by the Department of Justice.
4. all of the above.

**II. Problems:** Insert your answer to each question below in the box provided. Use the 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) [Marginal revenue, monopoly pricing: 22 pts] Suppose a campus shop selling official university coffee mugs finds that the price it sets for mugs is related to the quantity sold as follows.

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| --- | --- | --- | --- |
| Price | Quantity | Revenue | Marginal revenue per mug |
| $10 | 10 | $ |  |
|  |  |  | $ |
| $9 | 20 | $ |  |
|  |  |  | $ |
| $8 | 30 | $ |  |
|  |  |  | $ |
| $7 | 40 | $ |  |
|  |  |  | $ |
| $6 | 50 | $ |  |

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| a. [10 pts] Compute the shop’s *revenue* schedule and place your answers in the unshaded boxes above. |  |
| b. [8 pts] Compute the shop’s *marginal revenue* schedule and place your answers in the unshaded boxes above. |  |
| c. [2 pts] Suppose the shop’s marginal cost is constant and equal to $5 per mug. How many mugs should the shop sell to maximize profit? Give an answer to the *nearest 10 mugs.* | mugs |
| d. [2 pts] What price should the shop set for mugs to maximize profit? | $ |

(2) [Marginal revenue, monopoly pricing, welfare analysis: 24 pts] Acme Recreation Company sells a patented toy. Its demand and marginal cost curves are shown below.

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| a. According to the graph above, how much are buyers willing to pay for the 40th toy? (Give an answer to the nearest dollar.) | $ |
| b. According to the graph above, how much will Acme's total cost increase if it increases the quantity of toys that it makes from 40 to 41? (Give an answer to the nearest dollar.) | $ |
| c. Plot and label Acme's marginal revenue curve in the graph above. |  |
| d. Compute the quantity of toys that Acme must produce and sell to maximize profit. | toys |
| e. Compute the price that Acme will set for its toy to maximize profit. | $ |
| f. Compute the social deadweight loss from this monopoly price. | $ |

(3) [Marginal revenue, monopoly pricing: 16 pts] Bunny Hill Winter Sports has a local monopoly because it is the only ski area in the metropolitan area. Marginal cost of serving customers is **$5** per customer. Daily demand for admission to Bunny Hill is given by the following equation:

P = 15 – (Q/100)

where P is the admission price and Q is the number of customers.

a. Find the equation for Bunny Hill's marginal revenue.

MR =

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| b. Compute the number of customers (Q) that Bunny Hill will admit each day to maximize profit. |  |
| c. Compute the admission price (P) that Bunny Hill will set. | $ |
| d. Assume that Bunny Hill’s average cost is also $5 per customer. Compute Bunny Hill’s total daily profit. | $ |

(4) [Monopoly, markup formula, Lerner index: 8 pts] Bigscreen Movie Theatre enjoys a local monopoly. Its marginal cost per customer is $4. The management believes the elasticity of demand for its movies is -3.

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| a. What admission price should Bigscreen set, to maximize profit? | $ |
| b. Compute this monopolist's Lerner index (also called the "price-cost margin" or the "markup ratio"). Recall that the Lerner index is defined as L = (P-MC) / P . | L = |

(5) [Structure-Conduct-Performance paradigm: 10 pts] Classify each of the following as industry "structure," "conduct," or "performance."

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| a. Advertising. |  |
| b. Consumer and producer surplus. |  |
| c. Industry concentration. |  |
| d. Degree of price competition. |  |
| e. Exclusionary practices. |  |

**III. Challenge question** [6 pts] Reconsider the information in problem (3) above.

a. Compute the social deadweight loss from Bunny Hill’s monopoly pricing. [Hint: sketch a graph first.] Show your work and circle your final answer.

b. Suppose that Bunny Hill’s monopoly status depends on local zoning laws that exclude other ski areas from opening. If other ski areas were to open, competition would drive Bunny Hill's profit to zero. Bunny Hill must lobby local officials in order to keep these laws in place and retain its monopoly status. What is the maximum amount of money that Bunny Hill is willing to pay per day to lobby local officials to retain its monopoly status? Justify your answer.

c. Should such payments be considered a loss of economic efficiency, in addition to the deadweight loss computed in part (a) above? Justify your answer.

[end of quiz]