

ECON 370-001  
Midterm Examination  
Instructor: Eli Dourado  
Spring 2009

Name: \_\_\_\_\_

Instructions: All questions are weighted equally. Answer them perfectly.

1. Consider a monopolist facing market demand of  $Q = 1 - P$ , and with constant marginal cost  $M$ . Find an expression for the profit-maximizing price and quantity in terms of  $M$ , as well as the resulting profit. Now suppose the firm is able to perfectly price discriminate. Find an expression for the firm's profit in terms of  $M$ . [Hints: You may find the question easier if you draw a graph. When you are done answering the question, plug in  $M=0$  to see if your answer makes sense.]
2. There are two investment projects a firm may undertake, each requiring \$1 million. The firm can only undertake one project. For either project, half will be financed through equity and half will be financed with debt at an interest rate of 10%. Each project has a 50% chance of success and a 50% chance of failure. If project 1 succeeds, it pays \$1.5 million, and if it fails, it pays \$900,000. If project 2 succeeds, it pays \$2 million, and if it fails, it pays \$400,000. What is the expected payoff of each project? Which project do equity holders prefer? Which one do debt holders prefer? Why?
3. You are the CEO of a company in an industry with a small number of firms. In your country, collusion is perfectly legal, but the government will not enforce your collusive contracts; that is, the government will not interfere with you, but it also will not enforce any agreement to fix prices or quantities. If you and the other firms in your industry attempt to collude, what difficulties will you face? Under what circumstances will the collusion fail, and under what circumstances will the collusion succeed?
4. Consider a Cournot industry *with entry*. What are the sources of inefficiency? Can efficiency be improved through government regulation? If so, how? If not, why not?
5. Singles bars typically charge a higher entrance fee for men than they do for women. Is this price discrimination? Is it evidence of market power? Explain.