ECON 360: Intermediate Microeconomics

PRACTICE Final Exam, Summer 2024

- Define any variables you need to answer the problems.
- All materials except for your cheat sheet should be put away before beginning the exam. Use of cell phones during the exam for any purpose is forbidden.
- Please write your answers in the space provided.
- Keep your answers short but clear. Your goal is to convince a skeptical grader that you understand the relevant concepts well enough to answer the question you are given.
- The questions on the exam sum to 56 points.
- Remember to turn in your cheat sheet with your exam.
- Good luck on your Econ test!

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1. (4 points) What is your name?

1 True/False Questions

Indicate "T"rue or "F"alse for each of the following statements or claims. For each false statement, if you correctly and clearly explain why it is false, I will give you a bonus point. No explanations necessary for claims or statements which you think are true.

2. (2 points) Ben and Jerry are arguing over the best way to find their profit maximizing quantity of ice cream to produce. Both Ben and Jerry agree their production function is $y = K^{\frac{1}{2}}L^{\frac{1}{2}}$. Ben argues they should use profit maximization to figure out their profit maximizing quantity. **Claim**: Based on what we have learned in class, Ben is correct.

3. (2 points) You run a tutoring center for economics students. To produce tutoring, you hire both workers as labor and rent supplies as capital. When L=5 and K=6, hiring an extra worker while keeping the amount of capital constant increases your revenue by \$50. **Claim**: It would be consistent with profit maximizing behavior as we have seen in class to hire another worker if the wage was \$30.

4. (2 points) **Claim**: All production functions with perfect subsititutes exhibit constant returns to scale.

5. (2 points) Consider a Cobb-Douglas production function with decreasing returns to scale. **Claim**: Based on what have learned in class, the input bundle (6,7) and the input bundle (6,8) could possibly be on the same isoquant.

6. (2 points) **Claim**: Based on what we have seen in class, in a monopoly market, the more inelastic the demand curve the higher the price the monopolist will charge holding the monopolist's marginal cost constant.

2 Multiple Choice Questions

Circle the best answer to each question. There is only one answer for each question. No explanation necessary.

7. (2 points) My neighbor makes kettle corn, which makes the entire street smell like a delicious carnival. I gain enjoyment out of this nice aroma, even though my neighbor does not take that into account when deciding how often to make kettle corn. Based on what we have learned in class, which best describes the smell of popcorn that results from my neighbor making popcorn?

    A. Negative externality

    B. Positive demand externality

    C. Positive supply externality

    D. External cost

8. (2 points) Consulting Company Inc produces slide decks for clients, and uses workers and computers in order to produce slide decks. If Consulting Company Inc's production function always requires two workers and 1 computer to produce a slide deck, which best represents their production function?

    A. $y = \min\{2K, L\}$

    B. $y = 2L + K$

    C. $y = \max\{L, 2K\}$

    D. $y = \min\{L, 2K\}$

9. (2 points) Bill runs a dairy farm, with farmers as his source of labor and cows as his source of capital. Bill produces and sells milk in a perfectly competitive market, and wants to know, based on what you have learned in class, what he should do in the long run. The price of milk is \$4 per gallon. At his current output level, Bill's average total cost is \$5 per gallon. Which best describes what you would tell Bill to do.

    A. Raise his price of milk.

    B. Exit the market.

    C. Remain in the market.

    D. Shutdown.

10. (2 points) There are many manufacturers of computer keyboards. Each manufacturer sells a very similar product, but you can tell which manufacturer made any particular keyboard. There are some barriers to entry in the keyboard market. In the short run, some manufacturers may may an economic profit, but in the long run economic profits are zero. Based on what we have learned in class, which best describes the market for keyboards?

A. Monopolistic Competition

B. Perfect Competition

C. Oligopoly

D. Duopoly

11. (2 points) Which option below is NOT an externality based on what we have learned in class.

    A. A pizza restaurant installs lights outside the restaurant and it makes the neighborhood safer to walk around in.

    B. A pizza restaurant opens in my neighborhood and I get enjoyment from the smell of pizza.

    C. A pizza restaurant decides to open in my neighborhood and I love pizza.

    D. A pizza restaurant opens and the trash outside the restaurant increases the amount of rats by my house. I do not like rats.

3 Short Answer Questions

These questions all require an explanation. Remember you are trying to convince me you understand the why and the how of what you are doing, not simply getting the answer correct. Cite specific concepts from class in your answers for full credit.

12. Ellie and Johnny are playing hide and seek in a two story house. Ellie is the seeker, and Johnny is the hider. Each person can either choose to go upstairs or downstairs. Ellie gets 1 point if she finds Johnny, which only happens if Ellie and Johnny both pick the same floor. Otherwise Ellie does not find Johnny and gets zero points. Johnny gets 1 point if Ellie does not find him, which happens if Ellie and Johnny pick different floors.

    (a) (4 points) Suppose Ellie and Johnny both pick which floor at the same time. Using the concepts of best responses/replies from class, is there a pure strategy Nash Equilibrium to this game? Why or why not?

(b) (4 points) Suppose Johnny picks first, and Ellie gets to pick second. If Ellie does not get to know which floor Johnny picked when she decides, would Ellie have any advantage to moving second? Why or why not?

13. Dave is a farmer, and he sells flour. The flour market is perfectly competitive. The price that prevails in the flour market is \$5 per pound of flour. Now consider Dave's cost. Regardless of how much flour he produces he must pay \$200. His average variable cost is $AVC = Q - 5$.

    (a) (4 points) Derive Dave's profit function based on what we have learned in class.

(b) (4 points) Find Dave's profit maximizing quantity. Also find Dave's AVC and ATC at the profit maximizing quantity.

(c) (4 points) Based on what we have learned in class, should Dave operate or shut down in the short run? Show all your work and explain your answer.

(d) (4 points) Based on what we have learned in class, should Dave remain in the market or exit in the long run? Show all your work and explain your answer.

14. Suppose Suzie operates a lemonade stand outside her house, and finds that only a few other kids in her neighborhood also operate a lemonade stand. People walking by can easily tell which lemonade stand makes a particular glass of lemonade. The demand for demand is downward sloping. Suzie and the other producers of lemonade decide they are going to make it impossible for other kids to start selling lemonade in front of their house by making it extremely difficult for anyone else in the neighborhood from opening a lemonade stand in front of their house. Suzie and her friends have been doing this for years, and have continuously charged a price above their average total cost.

    (a) (4 points) Using concepts from class, which type of market best describes the lemonade market in Suzie's neighborhood? Use at least two attributes of the market structure and explain your answer.

(b) (4 points) Suppose Suzie faces the sort of cost curves we have seen in class. Based on the description above, and what we have learned in class, show the deadweight loss in the oligopoly market compared to what would happen if the neighborhood lemonade market was perfectly competitive You will need a demand, marginal revenue, and marginal cost on your graph. Again, draw the curves based on what we have seen in class.