Economics 202: Final Exam Practice Problems

Instructions:

- You have 2 hours and 55 minutes to complete this examination.
- This test is open book and open note.
- Complete each question to the best of your ability. There is no penalty (though no reward) for guesses, so give each question your best effort.
- Your grade on the examination will be the sum of your scores on the ten best pages (out of 11) on the examination. Each full page receives a score on the following approximate scale:

10	All aspects of all problems are done correctly (Mastery)
8-9	Most aspects are correct with minor flaws only (Proficiency)
7-8	Work demonstrates a basic understanding with some flaws (Competency)
6-7	Work demonstrates limited understanding with major flaws (Deficiency)
5-6	Work suggests an honest attempt but with no real understanding (Failure)
0-4	No real effort was made (blank or mostly blank page)

Note: The problems that appear below are meant for practice for the final exam. The instructions above are the actual instructions, for reference.

Practice Problems:

1. Use a pair of supply and demand graphs to show that it is possible, when supply increases and demand decreases, for quantity to increase or decrease, even though price clearly decreases.

2. Supposedly, margarine is a substitute for butter. Explain what this means.

3. Continuing with margarine and butter, suppose that new regulations cause an increase in the cost of supplying margarine. In addition, butter becomes easier to produce due to a technical innovation. Use supply and demand to determine what will happen to the equilibrium price and quantity of butter, if possible. (One or both may be possible.)

4. The price elasticity of demand of an iPhone has been estimated to be 1.5. If the price of an iPhone increases by 20%, what change in quantity will be observed? Will it be an increase or a decrease?

5. Consider the following data on prices and quantities demanded for magazines at a local bookstore for a week:

Original Quantity Demanded:	240
New Quantity Demanded:	180
Original Price:	$3.99
New Price:	$4.99

   a. Calculate the price elasticity of demand for the magazines. Is the demand elastic or inelastic?

   b. Based on the elasticity for the magazines above, would you expect the total revenue to increase or decrease? Use a supply and demand graph to justify your answer.

6. Suppose the minimum wage for a particular industry is set at $10 per hour, while the current equilibrium wage is $12 per hour. What effect will the minimum wage have on the price and quantity of labor?

7. Suppose the average rent for studio apartments in Kalamazoo is $380. Rent control is put in place so that studio apartments can only cost $350. What will happen to the rental market for studio apartments in the short run? In the long run?

8. How would elasticity of studio apartments affect the outcome above in question 7?

9. Howard really likes to eat at a local pub, and he only ever orders bratwurst. The cost of a meal of bratwurst at the pub is $11, and his benefit is described by the table below for the number of meals eaten in a week:

Number of Meals Eaten	Total Benefit
1	$25.00
2	$45.00
3	$62.00
4	$77.00
5	$89.00
6	$98.00
7	$102.00

   a. How many meals per week will Howard purchase at the pub?

   b. What is the most a meal could cost for Howard to eat at the pub all seven days?

10. Explain what we mean by the positive externality of education. What other things create positive externalities?

11. Explain what we mean by the negative externality of pollution. What other things create negative externalities?

12. Imagine a game between Harvard and Yale in which each team must choose whether to employ the flying wedge (a violent football tactic). Each team's best outcome is to be the only team that employs the flying wedge. However, the players on both teams are better off if neither team employs the wedge than if both teams employ the wedge, since serious injury is much less likely. Answer the following questions:

    a. Describe the structure of this game using a payoff matrix. Can you tell which of our basic games this one matches in structure?

    b. Does either team have a dominant strategy? Explain.

    c. What are the Nash equilibria for this game? Explain.

    d. What is the likely outcome of this game? Explain.

    e. Which of our five standard games does this seem to match?

13. Regulation is often a way of addressing inefficient outcomes. In the game above, suppose the NCAA institutes penalties for violent tactics such as the flying wedge. Explain how these penalties can alter the structure of the game above so that the likely outcome (based on dominant strategies) becomes the one where neither team employs a flying wedge.

14. The year is 1778, and the Continental Army desperately needs to get supplies through to their troops at Valley Forge. A caravan of four wagons has left Philadelphia and must decide how to proceed. All four wagons can take the eastern route to Valley Forge, or the wagons can split up and two can take the western route instead. (The western route is too slow for all four wagons.)

    However, British Redcoats have intercepted dispatches that indicate the caravan is on its way. The British commander has just enough time to deploy two groups of scouts. He must choose whether to deploy both groups to the east, in order to maximize chances of spotting the caravan there, or split the groups up and send one to the west instead.

    If the entire caravan goes to the east and the British scouts also all go east, then the Redcoats will likely intercept and capture three of the four wagons.

    If the entire caravan goes east but the British split up their scouts, only two wagons will likely be captured.

    If the caravan splits up and the British concentrate both scout groups to the east, only one wagon will be intercepted and captured.

    Finally, if both the British and the Continentals choose to split up, two wagons (one each direction) will likely be captured.

    Game Theory wasn't around yet in the 1770s, but if you were to go back in time and use game theory to analyze the situation, you could make better decisions. What should each side do?

15. Compare and contrast perfect competition with monopoly. In particular, focus on how a firm determines quantity to produce, what determines the price that is set, and what the firm's profit will be in each case. Use graphs to support as appropriate.

16. Apply the various economic tools from our course to the following decision scenario:

    > Should Michigan privatize its school systems? What are the economic considerations that are relevant to this decision? What do they suggest? Discuss.

    (The fact that you will have a full page suggests that I expect a fair bit of discussion here. Show me what you know!)

17. Explain whether each of the following statements are true or false:

    a. "There are some times when it is better not to play a dominant strategy in a game."

    b. "Monopolistic competition always results in an economic profit for the firm."

    c. "Firms will enter a market when there is still profit to be made, but will exit the market as soon as the profit hits zero."

    d. "The more elastic a product is, the less tax revenue will be raised if we tax the product.""

18. Define the following terms:

    a. Public good

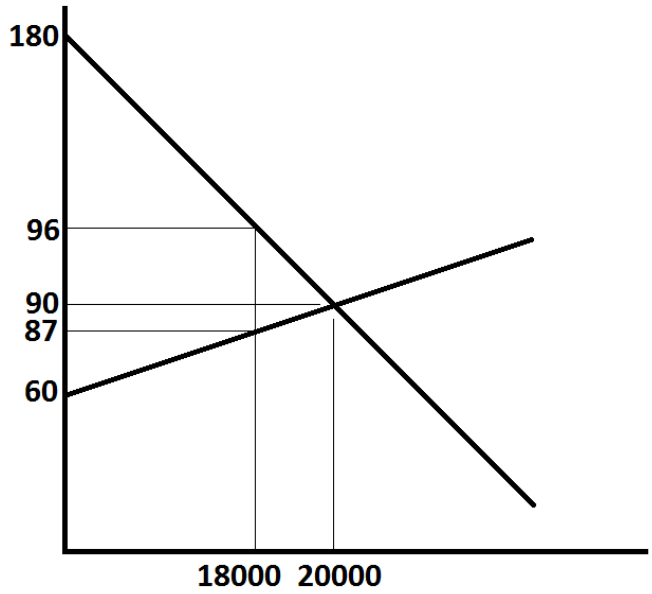
    b. Externality

    c. Elasticity

    d. Markup

    e. Marginal Cost

19. Consider the following graph:



    a. Before the tax of $9 per unit is imposed, what is the consumer surplus? The producer surplus? What is the total surplus?

    b. After the $9 tax is imposed, how much tax revenue is generated?

    c. After the tax, how much consumer and producer surplus remain? What is the new total of surplus? (Don't forget the tax!)

    d. What is the deadweight loss? What does deadweight loss mean?