

Economics 2
Winter 2009

your name _____
your TA's name _____
day and time of your discussion section _____

PRACTICE SECOND EXAM

DIRECTIONS: No calculators, books, or notes of any kind are allowed. All papers and notebooks must remain closed and on the floor at all times throughout the exam, and students are not allowed to leave the examination room until finished. Answer all questions in the space provided with the exam.

HINTS: Feel free to use either of the following formulas if you find them useful.

Area of a triangle = (1/2) (base) (height)

Area of a trapezoid = (1/2) (base1 + base2) (height)

PART I: MULTIPLE CHOICE—circle the correct answer (4 points each, 76 points total)

Questions 1 through 3 refer to an advertising game between Alice's company and Bonnie's company.

	Alice advertises	Alice doesn't advertise
Bonnie advertises	Alice gets 30 Bonnie gets 30	Alice gets 40 Bonnie gets 60
Bonnie doesn't advertise	Alice gets 40 Bonnie gets 20	Alice gets 50 Bonnie gets 50

- 1.) Which of the following statements is correct?
 - a.) Alice has a dominant strategy and Bonnie has a dominant strategy
 - b.) Alice has a dominant strategy but Bonnie does not have a dominant strategy
 - c.) Alice does not have a dominant strategy but Bonnie does have a dominant strategy
 - d.) Alice does not have a dominant strategy and Bonnie does not have a dominant strategy

- 2.) How would you characterize the Nash equilibrium for this game?
 - a.) In the Nash equilibrium, Alice and Bonnie will both get the same amount
 - b.) In the Nash equilibrium, Alice will get more than Bonnie
 - c.) In the Nash equilibrium, Alice will get less than Bonnie
 - d.) There is no Nash equilibrium for this game

- 3.) How would you characterize this game?
 - a.) prisoner's dilemma
 - b.) ultimatum bargaining game
 - c.) tit-for-tat
 - d.) none of the above

- 4.) Which of the following is the best characterization of tit-for-tat?
- a.) if the other person defected last round, then you cooperate this round
 - b.) if the other person defected last round, then you defect this round
 - c.) if the other person defected last round, then you refuse to play this round
 - d.) if the other person cooperated last round, then you defect this round
- 5.) In game theory, a threat by Player A is said to be credible if
- a.) the threatened action is within the power of Player A to carry out
 - b.) the threatened action would be in the interests of Player A to carry out
 - c.) the threatened action is exactly what Player B would want Player A to do
 - d.) the threatened action by A is exactly the same action that Player B was planning to do himself
- 6.) Consider the following version of the Ultimatum Bargaining Game. The researcher gives ten one-dollar bills to Carlos. Carlos is allowed to choose an integer X between 1 and 9 such that Carlos gets $\$X$ and Miguel gets the remaining $\$(10 - X)$. Miguel is then allowed to say either yes, he accepts the offer, in which case Carlos gets to take home X and Miguel gets to take home $10 - X$, or no, he refuses the offer, in which case neither gets anything. How would you characterize the Nash equilibrium for this game?
- a.) Carlos will end up with more than \$5
 - b.) Carlos will end up with exactly \$5
 - c.) Carlos will end up with less than \$5
 - d.) There is no Nash equilibrium for this game
- 7.) In actual experimental settings, many people in Miguel's position end up rejecting an offer from Carlos when $10 - X$ is small. According to experimental studies, which characteristics tend to make Miguel less likely to reject a small offer?
- a.) if the first player (Carlos) was a computer rather than from a person
 - b.) if MRI brain scans suggest a stronger emotional response from Miguel
 - c.) if Miguel is able to make a credible commitment as to which offers he will accept
 - d.) if Miguel turns out to be a very rich person
- 8.) Consider now the following twist on the previous setting-- before Carlos makes his choice of X , Miguel is allowed to specify a minimal offer Y which he will accept, such that if Miguel offers $10 - X$ which is less than Y , the offer will be refused. Assume that the researcher honors this commitment. How would you characterize the Nash equilibrium for this version of the game?
- a.) Carlos will end up with more than \$5
 - b.) Carlos will end up with exactly \$5
 - c.) Carlos will end up with less than \$5
 - d.) There is no Nash equilibrium for this game
- 9.) If there is no government intervention in a market where there is a negative externality,
- a.) not enough of the good will be produced
 - b.) the price of the good is not as high as it should be to send the right incentives to consumers
 - c.) there will be zero deadweight loss
 - d.) marginal social benefit would exceed the marginal private benefit

- 10.) The Coase Theorem suggests that the solution to the externality between beekeepers and the owner of an apple orchard is for
- a.) the government to tax honey production
 - b.) the government to subsidize apple production
 - c.) the government to subsidize honey production
 - d.) the orchard owner to pay the beekeeper
- 11.) Some economists say that it is not desirable to reduce air pollution to zero because
- a.) those economists are generally pro-business
 - b.) they think that Adam Smith's "invisible hand" is preferable to government regulation
 - c.) they believe the cost of reducing air pollution to zero exceeds the benefits
 - d.) they regard profit maximization as the most important social goal
- 12.) The Clean Air Act Amendments of 1990 resulted in companies being issued permits that allowed them to emit sulfur dioxide. Companies were allowed to buy or sell these permits from each other. The goal of allowing resale of the permits was
- a.) to keep pollution from being reduced to economically unjustifiably low levels
 - b.) to equalize the marginal cost of pollution abatement across different sources
 - c.) to help give companies a little extra cash they could use in order to meet their pollution abatement costs
 - d.) to help subsidize electricity producers located in Wyoming and Alaska.
- 13.) The number of tons of fish caught in the world's oceans has been falling over time because
- a.) global treaties now prohibit the deep-sea fishing that used to be a major source of commercial fish
 - b.) vast tracts in the Pacific and Atlantic Oceans are now off-limits for fisherman
 - c.) the number of big fish in the ocean is fewer than it used to be
 - d.) taxes on fishing are now so high that many small vessels have been put out of business
- 14.) How would you describe a situation in which anyone who wants is allowed to graze their cattle on a publicly owned pasture, without having to pay to use the pasture?
- a.) the marginal social cost of adding another cow to the pasture would be greater than the marginal private cost
 - b.) the marginal social cost of adding another cow to the pasture would be equal to the marginal private cost
 - c.) the marginal social cost of adding another cow to the pasture would be less than the marginal private cost
 - d.) I don't know, ask me something else
- 15.) The solution to the "tragedy of the commons" is
- a.) subsidize the external benefit
 - b.) privatize the commons
 - c.) educate participants about the consequences of what they are doing
 - d.) try to find more external aid to help the poor community

16.) The price to buy a computer in a retail store tends to be higher than the price paid over the internet because

- a.) a retail store is providing additional information along with the computer
- b.) a retail store usually has a local monopoly
- c.) retail stores are usually operated by managers who are more savvy about how to maximize profits
- d.) a retail store has to pay more to get the computer from the manufacturer

17.) Which of the following is most likely to lead to a decrease in the amount of time consumers spend searching for a product?

- a.) a decrease in the cost of searching
- b.) a decrease in the variation of prices across different sellers
- c.) a decrease in the amount of information that consumers can obtain from sources other than search
- d.) a decrease in the value of consumer's time

18.) The "lemons problem" in the used car market can be solved by

- a.) the seller offering a warranty to pay for any repairs during the first year
- b.) the seller of a bad car offering to sell it for a lower price
- c.) the seller of a good car refusing to sell it unless they receive a higher price
- d.) the buyer of a car spending more time searching to find out how much the car is sold for by different sellers

19.) The senior tranches of mortgage backed securities tended to receive very safe ratings from ratings agencies like Standard & Poor's and Moody's because

- a.) the default rate was expected to be high and the correlation in the default rates across different loans was thought to be high
- b.) the default rate was expected to be low and the correlation in the default rates across different loans was thought to be low
- c.) the default rate was expected to be low and the correlation in the default rates across different loans was thought to be high
- c.) the default rate was expected to be low and the correlation in the default rates across different loans was thought to be low

PART II: FILL IN THE BLANK (24 points total)—credit for correct answer only (no partial credit)

20.) (3 points each, 12 points total). Consider the following gambling game. Each time you play, you have a 50% chance to win \$1, a 30% chance to win \$2, and a 20% chance to win \$5. Mei-Ling plays the game 10 times, and wins the \$1 six times, wins the \$2 three times, and wins the \$5 once.

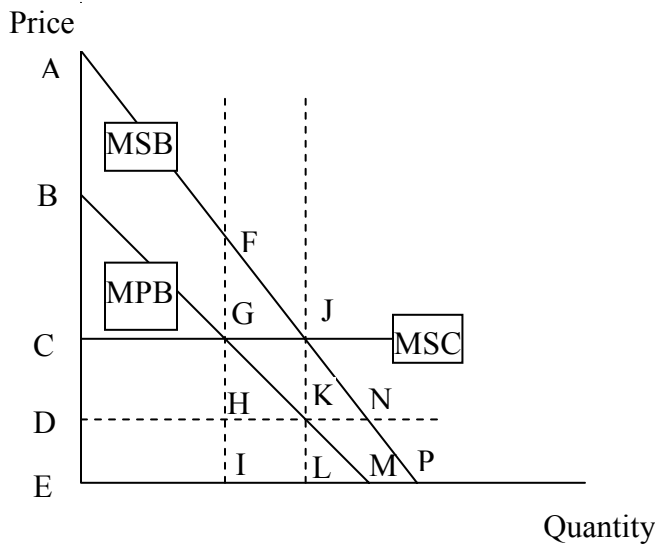
- a.) Calculate Mei-Ling's expected winnings.

b.) Calculate Mei-Ling's average winnings

c.) Suppose Mei-Ling is risk-neutral and would have to pay \$2.00 each time to play the game. Would she want to play?

d.) Can you suggest anything that Mei-Ling could do to increase her average winnings?

21.) (3 points each, 12 points total). Consider the following diagram, which shows a market in which there is a positive externality or external benefit:



Three solid lines have been labeled in this diagram: MSB denotes marginal social benefit, MPB denotes marginal private benefit, and MSC denotes marginal social cost. You should assume that marginal social cost equals marginal private cost. The diagram also includes three unlabeled dashed lines, which are drawn at points where two of the solid lines intersect, because something economically important sometimes happens wherever two lines intersect. Also there are individual letters (A through P) labeling particular points where different lines intersect, again, because something important may happen at some of those points.

In these questions you will be asked how big is a certain magnitude. If the answer to a question is represented by a geometric distance (for example, by the distance from B to C), you should indicate BC when asked for that magnitude. If the answer takes the form of a particular area (for example, the area bounded by D, K, M, and E), you should indicate DKME when asked for that magnitude. If the magnitude that a given question asks for is zero, you should answer 0.

- a.) How big is the consumer surplus under the private equilibrium, in which people do not take the positive externality into account? _____
- b.) How big is the deadweight social loss associated with the private equilibrium? _____
- c.) If the government were to set a subsidy in this market, how big should the subsidy be? _____
- d.) If the government did impose a subsidy of the size you recommended in part (c), how big would the total economic surplus be? (Note: your calculation of total economic surplus should include consumer surplus, external surplus, and cost to the government of the subsidy) _____

ANSWERS:

1a 2c 3d 4b 5b 6a 7a 8c 9b 10d 11c 12b 13c 14a 15b 16a 17b 18a 19b
20a \$2.10 20b \$1.70 20c yes 20d play more times
21a BGC 21b FGJ 21c 21d AJC