

Please write your answers on a clean sheet of paper that I can run through a Xerox machine. There are ten problems in this assignment. **(Due in class on Monday, 3/9)**

1. Church and Ware (2000, p. 151), Chapter 4, #2
2. Church and Ware (2000, p. 181), Chapter 5, #5
3. Church and Ware (2000, p. 228), Chapter 7, #1
4. Church and Ware (2000, p. 228), Chapter 7, #2
5. Church and Ware (2000, p. 229), Chapter 7, #7
6. Church and Ware (2000, p. 300), Chapter 9, #4
7. Church and Ware (2000, p. 301-302), Chapter 9, #6
  
8. Suppose that there are three kinds of cars: good, medium, and bad. Owners value good cars at \$20,000, medium cars at \$15,000, and bad cars at \$10,000. Forty percent of all cars are good, 40 percent are medium, and 20 percent are bad. Buyers cannot tell the quality of a car before they buy it.
  - a. Explain why there is no market for good used cars.
  - b. Explain why there is no market for medium used cars.
  - c. Is there a market for bad used cars? Why or why not?
  - d. What in your view is the most unrealistic assumption of this problem?
  
9. Consider an industry with a demand relationship given by

$$P = 120 - Q$$

Assume marginal costs and average total costs are zero ( $MC = AC = 0$ ). Assume further that there are two firms that engage in Cournot competition.

How much output would each firm produce? What price would result in the market? In what way is this Cournot equilibrium also a Nash equilibrium?

10. A firm employs a worker who likes to use drugs, and must decide whether or not to test the employee for drug use. When straight, the worker generates \$60 in revenue for the firm, but after using drugs the worker is only worth \$30 to the firm. The worker's wage is \$40. Drug testing costs the firm \$5, while staying straight costs the worker an equivalent of \$15. Drug testing is perfectly reliable, and if the worker is caught, he gets fired, generates no revenue, and receives no wage.

Show the game in normal form and find the mixed strategy Nash equilibrium of the game.