

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (15 points) Copy the payoff matrix to the right onto your homework sheet. Last week, I asked you to find the Nash and cooperative equilibria for this matrix. This week, I want you to find the secure strategies, a.k.a. safe strategies, or as your book calls them the maximin strategies. Explain your how you found them.

Question #1		Mustard Plug	
		High Price	Low Price
Less Than Jake	High Price	13	11
	Medium Price	14	17
		4	8
		12	18

2) (15 points) Copy the payoff matrix below onto your homework sheet. Find the secure strategies, a.k.a. safe strategies, or as your book calls them the maximin strategies. Explain your how you found them.

Question #2		Mustard Plug	
		High Price	Low Price
Less Than Jake	High Price	13	15
	Medium Price	10	11
		14	8
		12	8

3) (25 points) Write a payoff matrix for the following situation. You like bowling and the person you are dating likes to dance. If you are apart, neither person gets any satisfaction. If you are together, then you get 10 units of happiness if you are both bowling and your date gets 5 units of happiness. If you are together and dancing then you get 5 units of happiness and your date gets 10 units of happiness. Explain how you created the matrix. Why might a mixed strategy work better than a pure strategy?

4A) (5 points) Often the cooperative outcome is not a Nash equilibrium. Explain why it is probably impossible to get cooperation in a non-repeated game.

4B) (10 points) Explain why an infinitely repeated game may be able to achieve the cooperative outcome in the situation described in 4A.

4C) (10 points) Implicitly, the argument given in your answer to 4B makes an assumption about the benefits from cheating and the penalties after the cheating. What did you assume? Why does it require that assumption?

5) (20 points) Write the decision tree for a sequential game with the following description. Coke decides whether or not to build a new factory. Then Pepsi decides whether to charge a high price or a low price. If the factory is built and Pepsi charges a high price, then Coke gets a payoff of 10 and Pepsi gets nothing. If the factory is built and Pepsi charges a low price then Coke gets a payoff of 3 and Pepsi gets 8. If the factory is not built and Pepsi charges a high price then Coke gets a payoff of 7 and Pepsi gets 6. If the factory is not built and Pepsi charges a low price then Coke gets a payoff of 15 and Pepsi gets 4. Find the equilibrium. Explain how you found it.