1. Person 2 owns a booth at the craft show, but he has no crafts to sell. Person 1 has crafts to sell, but no booth. The craft show lasts for three days. The two people will meet briefly each of the three mornings of the show. Each morning, person 1 can make a single offer to person 2, of a payment to rent the booth for the duration of the show. Each morning, person 2 can accept or reject the offer. (If he accepts, person 1 gets to use the booth for the duration of the show ; if he rejects, the booth sits empty until the next morning, when person 1 can make another offer.) The booth generates $1000 in revenue per day. Person 1's payoff, if her offer is accepted, is the total revenue she earns, minus the payment she makes to person 2. Person 2's payoff is the payment he gets. (So, for example, if person 1's offer were rejected on the first morning, but her offer of $800 were accepted on the second morning, then person 1's payoff would be $1200, and person 2's payoff would be $800.)

What is the sub–game perfect Nash equilibrium to this game?

2. Same game as question #1, with one difference. This time, it's person 2 who gets to propose, each morning, how much he is willing to charge in rent for the booth, and it is person 1 who, each morning, gets to accept or reject the proposal from person 2.

What is the sub–game perfect Nash equilibrium to this game?

3. Two gangs decide simultaneously each day, whether to fight, or to share their turf. The payoffs to the two gangs from these choices of actions are depicted in the following matrix

	F	S
f	$(3,3)$	$(8,0)$
s	$(0,8)$	$(5,5)$

Each day, there is some probability that the game will end. If there is to be a subgame perfect Nash equilibrium to this game, in which the gangs choose to share each day, how likely must it be that the game will continue each day?

4. A monopoly can sell to two groups of customers. Quantity demanded by female customers is

$$Q_F = 120 - p \quad p \leq 120$$

if p is the price paid by female customers, and quantity demanded by male customers is

$$Q_M = 24 - p \quad p \leq 24$$

if p is the price paid by male customers.

What price should the monopoly charge in order to maximize profits, if it must charge the same price to all customers, male or female, and if its total cost function is

$$TC = 24Q$$

where Q is the total quantity of the good produced by the monopoly?

5. If the monopoly could charge different prices to male and female customers, what prices should it charge to each of the two groups of customers in order to maximize its total profits?