Game Theory
Tutorial 1
Questions

Exercise 1 *The manager of a multinational company and the union of work-ers are preparing to sit down at the bargaining table to work out the details of a new contract for the workers. Each side has developed certain proposals for the contents of the new contract. Let us call union proposals "Proposal 1", "Proposal 2" and "Proposal 3", and manager's proposals "Contract A", "Contract B" and "Contract C". Both parties are aware of the financial as-pects of each proposal–contract combination. The reward matrix is:*

Proposal	Contract		
	A	B	C
1	8.5	7.0	7.5
2	12.0	9.5	9.0
3	9.0	11.0	8.0

Reward matrix

These values are the contract gains that the Union would secure and also the cost the company would have to bear.

Is there a clear–cut contract combination agreeable to both parties, or will they find it necessary to submit to arbitration in order to arrive at some sort of compromise?

Exercise 2 *Consider the same problem as in Example 1, but with the fol-lowing reward matrix:*

Proposal	Contract		
	A	B	C
1	9.5	12.0	7.0
2	7.0	8.5	6.5
3	6.0	9.0	10.0

Reward matrix

- *Is there an equilibrium point?*

- *Find the mixed strategies for the union and the manager.*

- *Formulate the LP problem to determine the optimum strategy for the union and the optimum strategy of the manager.*