Experiment: 8

1. UA and DU are devising their strategies for the 1994 national championship men's college basketball game. Assessing the strengths of their respective "benches," each coach comes up with four strategies for rotating the players during the game. The ability of each team to score 2-pointers, 3-pointers, and free throws is key to determining the final score of the game. The following table summarizes the net points UA will score per possession as a function of the different strategies available to each team:

		DU			
		DU1	DU2	DU3	DU4
UA	UA1	3	-2	1	4
	UA2	2	3	-5	0
	UA3	-1	2	-2	2
	UA4	-3	-5	4	1

a) Formulate the linear programming model for the championship game.
b) Build an excel model for the problem.
c) Solve the above model using the excel solver to find which of the two teams is projected to win the championship?

2. Leaders of two political parties engage in a bitter campaign to garner more votes in order to win a state election. Both parties have short-listed three major issues on which they decide to target their opponent. Selection of a particular issue depends on its effectiveness in terms of capturing opponents' votes. It is assumed that there are fixed number of voters and all will vote. One party can only gain by garnering more votes than its competitor. Also selection of one issue is countered by selecting an issue by other party. So, the following payoff matrix shows the expected increase in votes of a party with regard to combination of issues of respective parties.

		Party B		
		Issue 1	Issue 2	Issue 3
Party A	Issue 1	5	2	-2
	Issue 2	0	1	-1
	Issue 3	-2	3	1

a) Formulate the linear programming model for the championship game.
b) Build an excel model for the problem.
c) Solve the above model using the excel solver to find which of the two teams is projected to win the campaign?