

MATHEMATICS AND STATISTICS 620-262 2003

ASSIGNMENT 1

DUE: 8TH OF AUGUST, 2003

Question 1

Solve the two person constant-sum game with the payoff matrix below. Identify an optimal strategy pair.

$$\begin{bmatrix} (16, 64) & (32, 48) & (39, 41) \\ (41, 39) & (47, 33) & (56, 24) \\ (29, 51) & (50, 30) & (26, 54) \end{bmatrix}$$

Question 2

1. Find the range of values for p and q that make the entry (a_2, A_2) a saddle point in the 2-person zero-sum game which payoff matrix is given below.

$$\begin{bmatrix} 3 & 4 & 5 \\ 9 & 7 & q \\ 4 & p & 6 \end{bmatrix}$$

2. Is it possible to have **both** of (a_2, A_2) and (a_3, A_2) as saddle points at the same time? What about **both** of (a_2, A_2) and (a_2, A_3) ? Give reasons for your answers.