MAT406H5F. Assignment 7, due November 19

Problem 1 of 5

Find the point of the optimal agreement for the two-person cooperative TU game given by the following bi-matrix.

$$\begin{pmatrix} (2,0) & (3,3) & (2,1) & (10,9) & (8,8) \\ (4,4) & (5,4) & (3,3) & (2,1) & (3,2) \\ (2,3) & (0,0) & (1,1) & (4,5) & (6,4) \\ (-1,0) & (8,7) & (5,6) & (3,2) & (2,2) \end{pmatrix}$$

Problem 2 of 5

Consider a two-person cooperative game given by the following matrix

$$\begin{pmatrix} (2,0) & (3,-3) & (2,-1) & (10,-9) & (0,0) \\ (7,5) & (3,1) & (3,2) & (2,1) & (-1,2) \\ (2,3) & (0,0) & (1,1) & (4,5) & (-1,4) \\ (-1,0) & (8,7) & (5,6) & (3,2) & (-1,5) \end{pmatrix}.$$

Solve the game as a TU game.

Problem 3 of 5

Find the Nash solution of the game from a previous problem played as an NTU game with disagreement point $(0,0)$.

Problem 4 of 5

Sometimes it appears a player would prefer to play a game without cooperating with the other player. The payoff matrix for a two-person non-zero-sum game is:

$$\begin{pmatrix} (3,8) & (4,4) \\ (2,0) & (0,6) \end{pmatrix}.$$

Find all its equilibrium pairs when considered as a non-cooperative game. Then find the solution of the game considered as a TU cooperative game. Which game would II prefer to play?

Problem 5 of 5

Find the NTU-solution and the equilibrium exchange rate of the following game without a fixed threat point.

$$\begin{pmatrix} (3,8) & (4,4) \\ (4,0) & (0,6) \end{pmatrix}.$$