

# UGEB2530 Games and Strategic Thinking

Name: \_\_\_\_\_ Student ID: \_\_\_\_\_

1. Consider the 2-person game with bimatrix

$$(A, B) = \begin{pmatrix} (6,1) & (2,8) \\ (1,3) & (7,0) \end{pmatrix}$$

- a) Write down the prudential strategies for the players

Prudential strategy for row player: (0.6,0.4)

Prudential strategy for column player: (0.8,0.2)

- b) Write down the Nash equilibrium of the game

Row player's strategy : (0.3,0.7); Row player's payoff : 4

Column player's strategy : (0.5,0.5); Column player's payoff : 2.4

- c) Write down the threat matrix.

$$T = \begin{pmatrix} 5 & -6 \\ -2 & 7 \end{pmatrix}$$

- d) Write down the threat strategies for the players.

Threat strategy for row player: (0.45,0.55)

Threat strategy for column player: (0.65,0.35)

- e) Write down the maximum total payoff and the threat differential of the game.

Maximum total payoff: 10 ; Threat differential: 1.15

- f) Write down the threat solution.

Payoff to row player: 5.575 ; Payoff to column player: 4.425