HW 4.4

Saturday, September 5, 2020 2:07 PM

Worked w/ Kail

For each game find:

$U_1(\sigma_1, \sigma_2)$ and $U_2(\sigma_1, \sigma_2)$ For

$\sigma_1 = (1/2, 1/2)$ and $\sigma_2 = (1/2, 1/2)$

FIGURE 3.4 Classic normal-form games.

1 \ 2	H	T
H	1, −1	−1, 1
T	−1, 1	1, −1

Matching Pennies

1 \ 2	C	D
C	2, 2	0, 3
D	3, 0	1, 1

Prisoners' Dilemma

1 \ 2	Opera	Movie
Opera	2, 1	0, 0
Movie	0, 0	1, 2

Battle of the Sexes

1 \ 2	H	D
H	0, 0	3, 1
D	1, 3	2, 2

Hawk-Dove/Chicken

1 \ 2	A	B
A	1, 1	0, 0
B	0, 0	1, 1

Coordination

1 \ 2	A	B
A	2, 2	0, 0
B	0, 0	1, 1

Pareto Coordination

D \ S	P	D
P	4, 4	2, 1
D	6, 1	0, 0

Pigs

Pennies: $U_1(\sigma_1, \sigma_2) = U_2(\sigma_1, \sigma_2) = .25 - .25 + .25 - .25 = 0$

Sexes: $U_1(\sigma_1, \sigma_2) = U_2(\sigma_1, \sigma_2)$

$= (2 \cdot 1/4) + 0 + 0 + (1 \cdot 1/4) = 3/4$

Chicken: $U_1(\sigma_1, \sigma_2) = U_2(\sigma_1, \sigma_2)$

$= 0 + (1 \cdot 1/4) + (3 \cdot 1/4) + (2 \cdot 1/4) = 6/4 = 1.5$