

Exercise 2, TEK5010 Multiagent systems 2018

Question 1

The following payoff matrix (A) is for the “Prisoner’s dilemma”.

		<i>j</i>	
		Defect	Coop
<i>i</i>	Defect	2,2	4,1
	Coop	1,4	3,3

The following payoff matrix (B) is for the “Matching pennies”.

		<i>j</i>	
		Heads	Tail
<i>i</i>	Heads	1,-1	-1,1
	Tails	-1,1	1,-1

The following payoff matrix (C) is for the “Game of chicken”.

		<i>j</i>	
		Defect	Coop
<i>i</i>	Defect	1,1	4,2
	Coop	2,4	3,3

- a) For each of these payoff matrices:
- Identify all (pure strategy) Nash equilibria
 - Identify all Pareto optimal outcomes
 - Identify all outcomes that maximize social welfare
- b) “Program equilibria make cooperation possible in the one-shot Prisoner’s dilemma”. Explain and critically assess this statement.