

Finite Mathematics (Math 10120), Spring 2018

Quiz 6, Monday April 30

Name: SOLUTIONS

1. Rex and Cody play the following game: Rex holds a black Ace, a black 3 and a red 8. Cody holds a red 2, a red 4 and a black 7. Both of them simultaneously choose a card to play. If the chosen cards are of the same color, Rex wins. Cody wins if the cards are of different colors. The amount won is a number of dollars equal to the number on the winner's card (Ace counts as 1.)

Write down the payoff matrix for Rex (with Rex's choices being the rows).

		<u>CODY</u>		
		(R,2)	(R,4)	(B,7)
<u>REX</u>	(B,1)	- 2	- 4	+ 1
	(B,3)	- 2	- 4	+ 3
	(R,8)	+ 8	+ 8	- 7

2. Robert and Cersei play a game of for which the payoff matrix is given below. These rows correspond to Robert's strategies, and the columns correspond to Cersei's strategies. The entries of the matrix give Robert's payoffs.

Find the saddle point, value, and solution for the game.

	c ₁	c ₂	c ₃	c ₄	min
r ₁	4	1	-3	-3	-3
r ₂	3	②	5	4	②
r ₃	0	1	6	-6	0
r ₄	2	-1	3	2	-1
max	4	②	6	4	max = 2

min = 2

↳ Saddle point = (2,2)

value = 2

Solution → (r₂, c₂)

→ Robert should play r₂
Cersei should play c₂