Math 331: Problem Solving Steven J Miller (sjm1@Williams.edu)

Second Remote Participation Lecture April 26, 2017 **RECTANGLE GAME:** Consider M x N board, take turns, each turn can break any piece along one horizontal or along one vertical, last one to break a piece wins. Does someone have a winning strategy?



	Move	#1's Money	#2's Money	#1's Bid	#2's Bid
tic tac toe	1				
	2	2			
1 I	3	8			
	4	Ļ			
	5	5			
	6	5			
	7	7			
	8	8			
	g)			
	10)			
	11	-			
	12				
	13	}			

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	2	2			
1 I	3	8			
	4	Ļ			
	5	5			
	6	5			
	7	7			
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	g)			
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	7	7			
	8	8			
	g)			
	10)			
	11	-			
	12				
	13	}			

Castle game: Have castles labeled 1 through 10 (label is value), divide 100 soldiers to attack the castles against an opponent, whomever sends more to a castle wins it. What strategy is best to get more points than opponent?

	Castle 1	Castle 2	Castle 3	Castle 4	Castle 5	Castle 6	Castle 7	Castle 8	Castle 9	Castle 10
Team 1										
Team 2										
Outcome										

	Castle 1	Castle 2	Castle 3	Castle 1	Castle 5	Castle 6	Castle 7	Castle 8	Castle 9	Castle 10
			Castle J	Castle 4	Castle J	Castle 0	Castle 7	Castle o		
Team 1										
Toom J										
Team 2										
Outcome										

	Castle 1	Castle 2	Castle 3	Castle 1	Castle 5	Castle 6	Castle 7	Castle 8	Castle 9	Castle 10
			Castle J	Castle 4	Castle J	Castle 0	Castle 7	Castle o		
Team 1										
Toom J										
Team 2										
Outcome										