

## Chapter 18: Game Theory

best response := the choice that yields the highest payoff GIVEN the other player's action

Nash Equilibrium := the outcome to a game in which everyone best responds

↳ requires correct expectations of others' actions

Prisoner's Dilemma:

		Player 2		
		A	B	
Player 1	A	GOOD worst, best		
	B	best, worst BAD		

if we both play A, we are both happy  
BUT how do I trust you to also play A?  
IF you play A, I want to play B  
So we both end up playing B

there is incentive to cheat

EX: Player 1    A    (10, 10)    (0, 15)  
                    B    (15, 0)    (5, 5)

NE = B, B ; payoff = (5, 5)

dominant strategy := a strategy that is the BR no matter the other players' action

· if both players have dominant strategies, both playing their dominant strategies will be the NE

· if one player has a dominant strategy, they will play it; the other will BR

maximin strategy := a strategy that maximizes the worst possible outcome (equivalent to avoiding worst possible outcome)

Coordination Games:

· neither player has a dominant strategy which leads to multiple equilibria

		Player 2	
		A	B
Player 1	A	BEST, bad	WORST
	B	WORST	bad, BEST

Anticoordination Games:

· neither player has a dominant strategy which leads to multiple equilibria

		Player 2	
		A	B
Player 1	A	worst	BEST, bad
	B	bad	BEST

· w/ multiple equilibria, one can be better than the other for everyone

↑ most important for exam

OTHER TOPICS ↓

· ultimatum game

· repeated games

· strategies for repeated games