Homework 1

- You must turn the assignment in on Canvas or email me if you have an issue.
- Please bring your completed homework in on Monday so we can have a meaningful review of the assignment.

Analyzing the Game

These definitions will be on both exams

Strictly Dominated Strategy

Strategy A is said to be strictly dominated by Strategy B if Strategy B always provides a higher payoff (not equal) than Strategy A for all the other player's strategies.

Best Response

Given a specific strategy chosen by the other player, the set of best strategies that give the highest payout. Notice multiple strategies may give this highest payout.

Nash Equilibrium

A strategy profile in which all players cannot receive a higher payout if they deviate from their strategy unilaterally.

Non-Rationalizable Strategy

A strategy that is never the best response to any of the other player's strategies

Finding Nash equilibrium

Define the best responses. Use the best responses to find all Nash equilibrium.

Pure Strategy Examples

Example 1

	Left	Right
SD	3,1	0,0
SU	3,1	2,2
GD	1,3	0,0
GU	1,3	2,2

	Tacos	Pizza
JJ	10,7	9,10
JN	10,7	6,12
NJ	7,9	9,10
NN	7,9	6,12

Tricky example

Player 1 \ Player 2	C	D
A	(0,0)	(0,0)
B	(0,0)	(1,1)

Solving for unknown: Solve for conditions on x and y st (A,C) is a NE.

		Player 2	
		C	D
Player 1	A	(x,y)	(9,10)
	B	(13,6)	(6,7)

Prisoner's dilemma

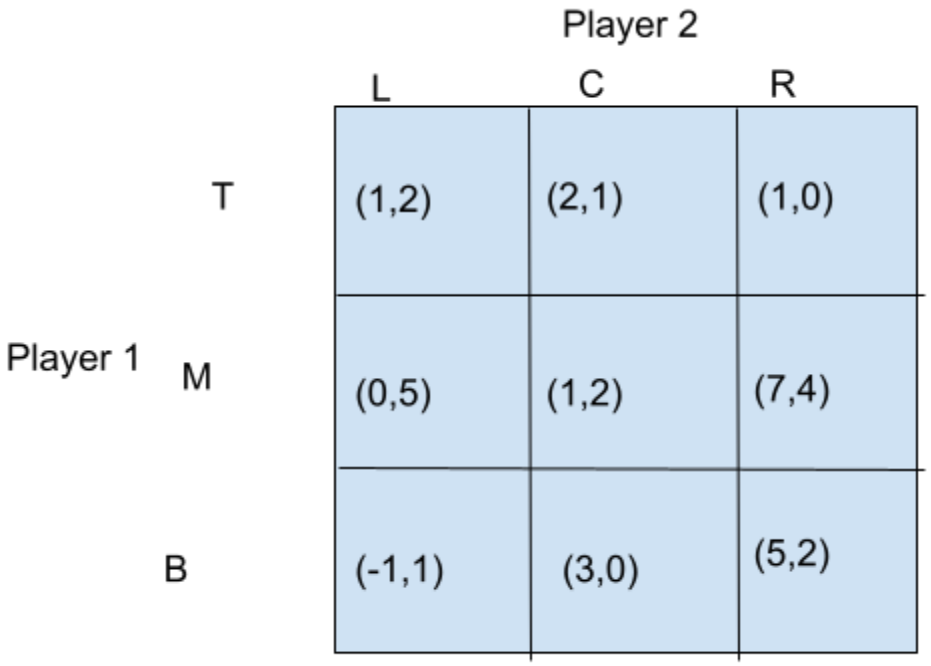
		Player 2	
		Confess	Quiet
Player 1	Confess	(-5,-5)	(0,-10)
	Quiet	(-10,0)	(-1,-1)

Trust-Honor

		Firm: Honor	Firm: No Honor
Employee	Trust	(10,10)	(-5,20)
	Don't Trust	(0,0)	(0,0)

Team Production

		Player 2	
		Shirk	Work
Player 1	Shirk	(2,2)	(3,1)
	Work	(1,3)	(4,4)


Player 2
L
C
R
T
M
B
Player 1
(1,2)
(2,1)
(1,0)
(0,5)
(1,2)
(7,4)
(-1,1)
(3,0)
(5,2)

		Player 2		
		L	C	R
Player 1	T	(5,3)	(3,5)	(2,6)
	M	(6,2)	(4,4)	(3,5)
	B	(1,7)	(6,2)	(2,6)

	Left	Right
SD	1,-2	2,-3
SU	4,-3	3,-1
GD	2,-3	3,-4
GU	1,-4	4,-2