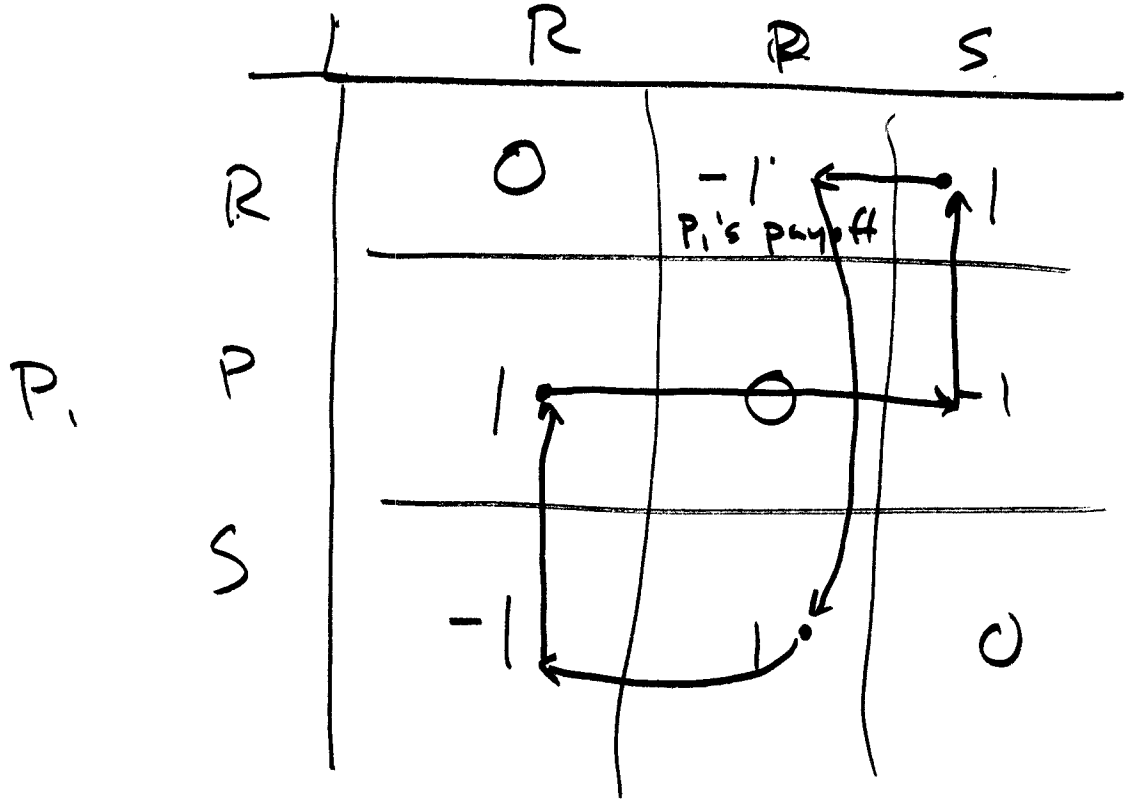
Games
- 2 players
- each with a choice of moves
- each combination of moves has a payoff for each player (organized in a table)

Rock - Paper - Scissors Zero sum game



horizontal arrows show P_2 would change moves
vertical arrows show P_1 would change moves

Prisoner's Dilemma (Not a zero sum game)

P_1 \ P_2	Confess	Not
Confess	(-5, -5)	(0, -10)
Not	(-10, 0)	(-1, -1)

Not Nash Equilibrium Best Possible outcome for each player.

Selling Roses (Zero sum)

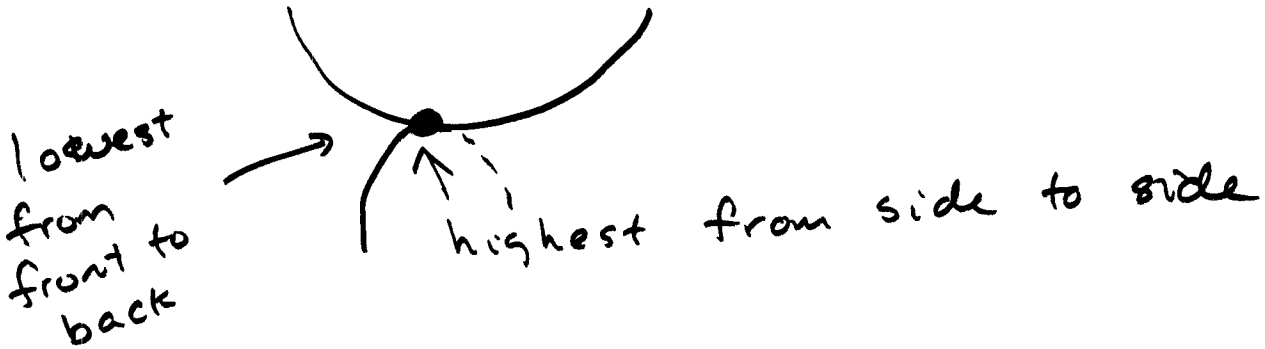
P_1 \ P_2	$5	$10	min = best for P_2
$5	0*	$P_1 \cdot 250$ (P_2: -250)	0*
$10	-250	0	-250
max = best for P_1	0*	250	0 = max of mins
			0 = Minimax
			maximin

P_2

P_1		a	b	min
	c	3	-2	-2
	d	5	4*	4
max		5	4	

maximin = 4
minimax = 4
} these are equal
4 = value of game to P_1

4 is a "saddle point"



P_2

P_1		r	s
	t	-1^* Saddle point	1
	u	-2	3

maximin = -1

minimax = -1

P_2

P_1		u	v
	x	1	2
	y	4	3^* Saddle

maximin = 3

minimax = 3

P_2

P_1		l	m
	n	3	1
	σ	1	3

maximin = 1

minimax = 3

No Saddle

Nash Equilibrium Theorem In Zero by Sum games, Games w/o saddles solved mixed strat.

Rock - Paper - Scissors

Play 900 times

	R	P	S	overall payoff
R	Play 100 times: 0	Play 100 times: -100	100 times: 100	0
P	100	0	-100	0
S	-100	100	0	0
	0	0	0	

900 times

		450 R	— P	450 S
300	R	150: 150	-	150: 150
300	P	150: 150	-	150: -150
300	S	150: -150	-	150: 0

0 also

Bonus HW Ch 11 1, 5, 6 a-h

Due at final