Math 486. Febr. 3, 2011. Midterm 1 5 problems, 15 pts each.
Name_____ m1 .... /75. total ...../.....
Show your work. Write your name on the class list and on every page you submit. Return this page.

1. For every given number t, solve for x, y the system
x+ty = 2, tx+y = -2

if $t=0$ $x=2, y=-2$
if $t\neq 0$ $x=\frac{2+2t}{(1-t^2)}$, $y=-2-\frac{2t+2t^2}{(1-t^2)}$

2-5. Find an equilibrium and the corresponding payoff.

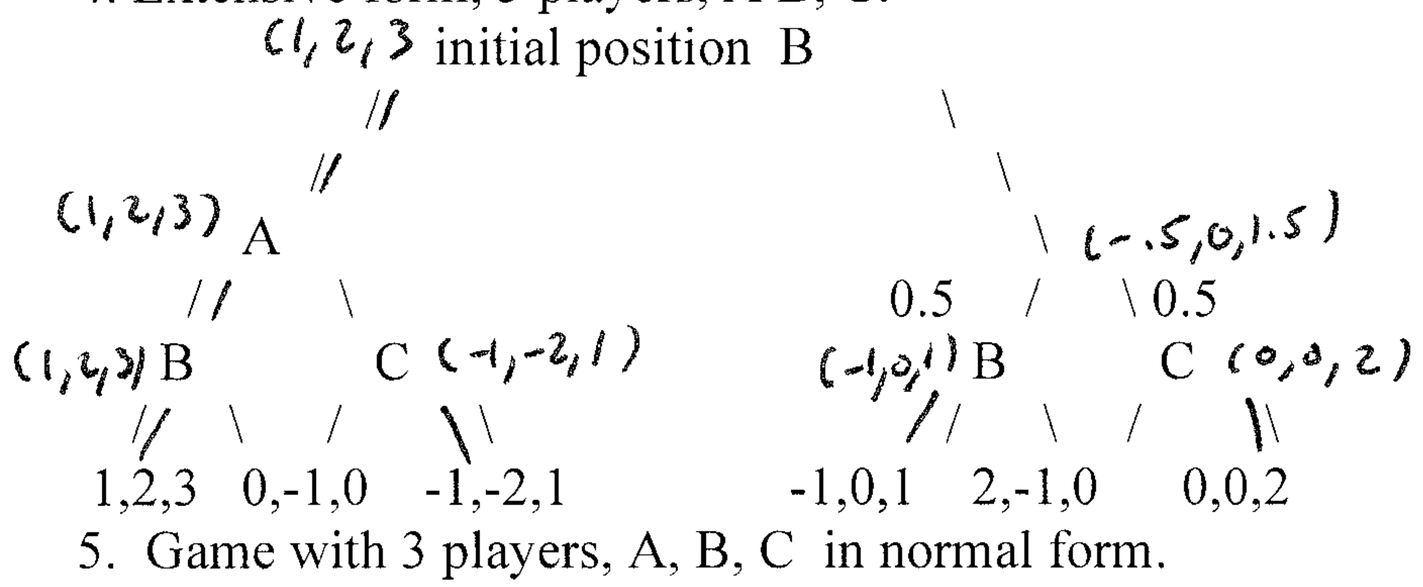
2. Restricted Nim. Last move wins. The bet is $1. Two player, A and B. Players alternate. A can take 1 or 2 stones in a move from a pile. B can take 1, 2, or 3 stones in a move from a pile. A starts with one pile, 100 stones.

3. 2 player game in normal form.

7, 1	4,0	-1, 3	0,0	3, 3	-3,4
5,-1	5,0	-2, 5	1, 4	3,1	0,0
0, 4	4,-1	-2, 4	6, 0	0, 3	1,1
1,4	5,0	0, 3	6,0	3,3	3,3

No equilibrium

4. Extensive form, 3 players, A B, C.



5. Game with 3 players, A, B, C in normal form.

strategy			payoff		
A	B	C	A	B	C
1	1	1	0	-1	1
1	1	2	1	1	-2
1	2	1	1*	0*	0*
1	2	2	0	0	1
2	1	1	0	-1	1
2	1	2	1	1	-2
2	2	1	1	0	-1
2	2	2	-1	1	0
3	1	1	0	-1	1
3	1	2	-1	1	2
3	2	1	1*	-1*	0*
3	2	2	-1	0	0

Equilibrium

A maximal payoff for each player does not change