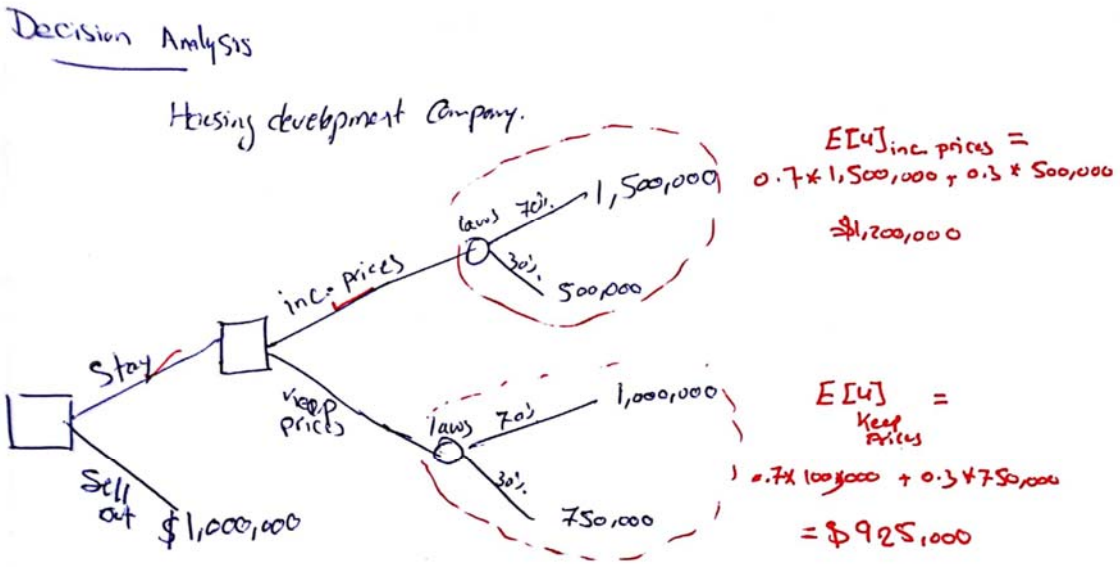
Decision Analysis:

As the owner of a major housing development company, you want to decide if you would stay in the house developing market or sellout your company. If you sold out the business, you are guaranteed a profit of $1,000,000. Meanwhile, if you stayed in business you must either increase your prices or keep the old prices. Either way, the outcome of your prices will be affected by the government new laws.

There are indicators that the government new laws might affect the housing market. There is a 70% chance the government new laws will increase the market profit and will generate a revenue of $1,500,000 if you increased your prices, otherwise (the other 30%), you will obtain only $500,000. Meanwhile, if you did not increase your prices, the new government laws will generate $1,000,000 with 70% chance, and $750,000 otherwise.

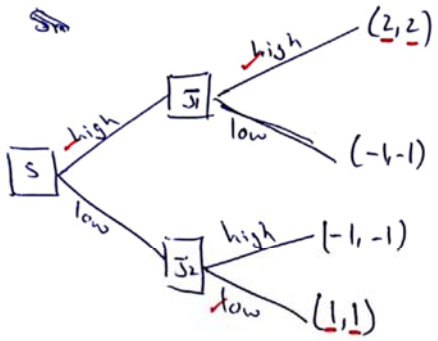
What would be your decision? Solve this problem using neat diagrams and illustrations. Provide a complete mathematical solution for this problem to determine your solution.



Game Theory: Sequential Games:

G1:
Smith and John are coordinating in a sequential game to maximize their profit of a product that can come in two sizes, big and small. Smith will move first to choose big or small sizes, then john. Payoff is shown in the tree

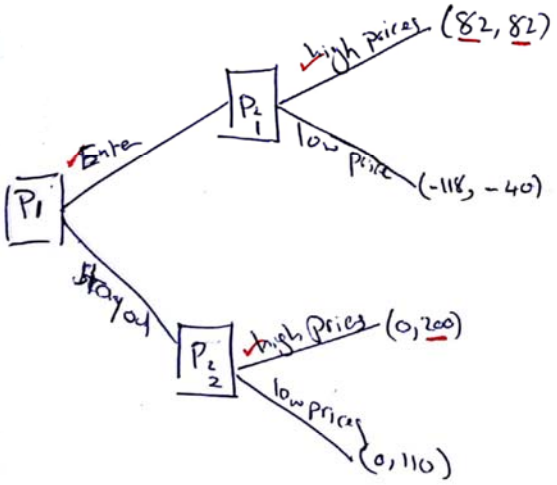
- Sequential games: (Coordination Game)



- Since John Moves last, John will Choose high if Smith Chooses high (1,1) and low if Smith Chooses low (2,2)
- Knowing John is rational and will follow the above, Smith will Choose high to have more utility.

G2:
The construction development market problem discussed in the class

- Sequential Game: (Market)



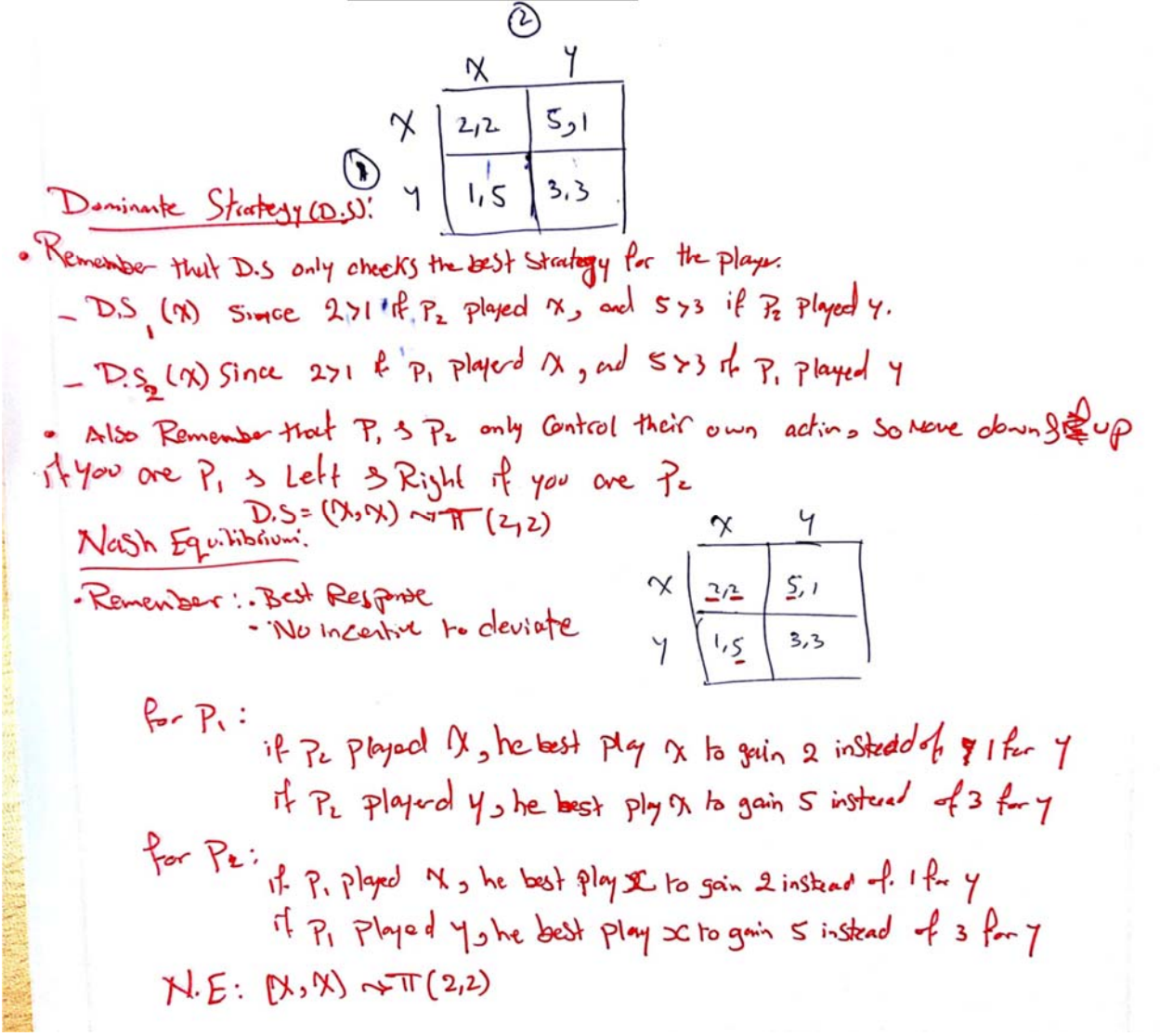
- P_2 Moves last, and will chooses high if P_1 Enter (82,82) <Strategy called (h|E)>, or high if P_1 Chooses to Stay out. (0, 200) < Strategy called h|S>
- P_1 Knowing that P_2 will Choose high either way, P_1 will Maximize the utility by choose Enter

Game Theory: Simultaneous Games

Determine the Dominate Strategy and Nash Equilibrium for each of the following games that Maximizes the players payoffs

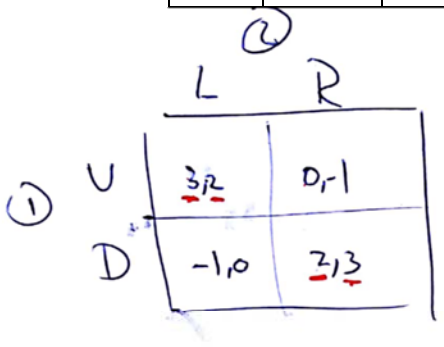
G1:

	X	Y
X	2,2	5,1
Y	1,5	3,3



G2

	L	R
U	3,2	0,-1
D	-1,0	2,3



D.S:
No dominate Strategy of P_1 : U is better than D if P_2 played L 3>-1
but D is better than U if P_2 played R 2>0

Same for P_2

N.E:
P_1: if P_2 played L, P_1 best play U to gain 3 instead of -1
if P_2 played R, P_1 best play D to gain 2 instead of 0

P_2: if P_1 played U, P_2 best play L to gain 2 instead of -1
if P_1 played D, P_2 best play R to gin 3 instead of 0

N.E: (U,L) ~ π (3,2)
(D,R) ~ π (2,3)