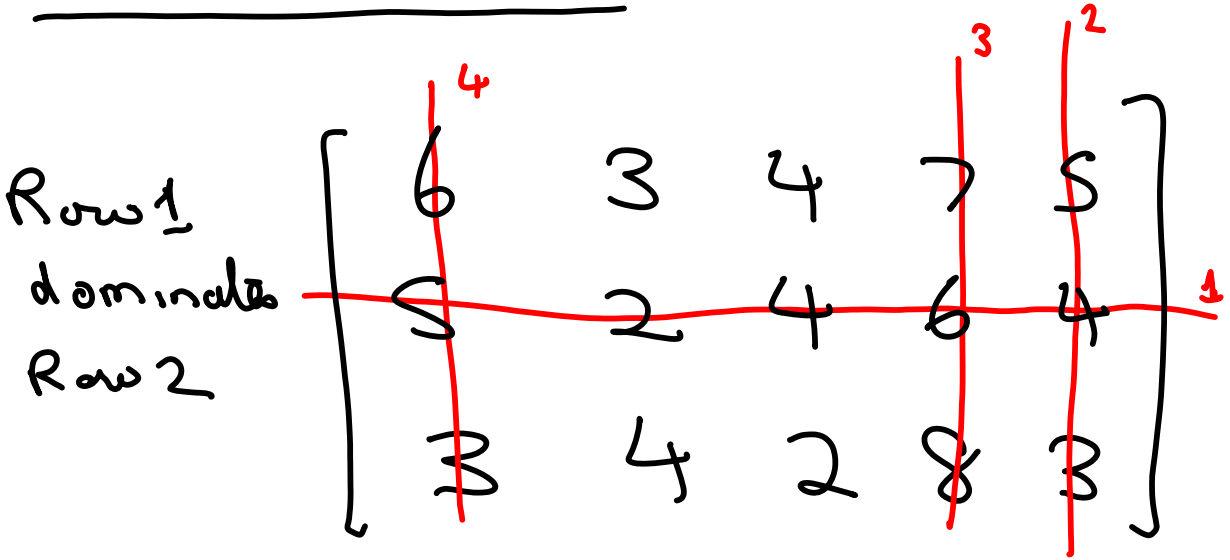
10/1/10

Dominance

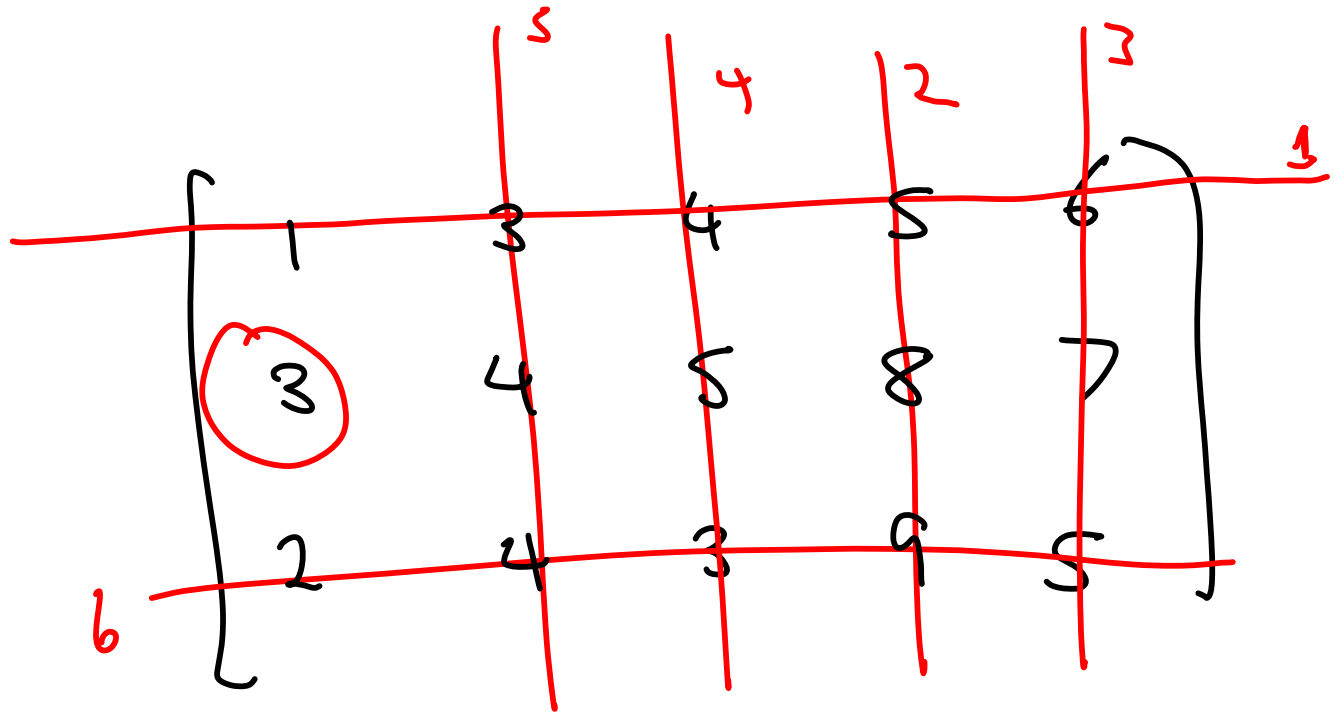


A can disregard 2

Column 3 dominates
Column 5

Row i dominates Row i'
if
$a_{ij} \geq a_{i'j}$ $\forall j$

Column j dominates
Column j' if
$a_{ij} \leq a_{ij'}$ $\forall i$


5
4
2
3
1
1
3
4
5
6
3
4
5
8
7
2
4
3
9
5
6

Symmetric Games

$$A^T = -A$$

Matrix is anti-symmetric

$$\begin{bmatrix} 0 & 1 & -1 \\ -1 & 0 & 1 \\ 1 & -1 & 0 \end{bmatrix}$$

$$PAY(p,p) = p^T A p = 0 \quad , \forall p$$

$$\sum_{1 \le i < j \le n} \underbrace{(A_{ij} + A_{ji})}_{0} p_i p_j + \sum_{i=1}^{n} \underbrace{A_{ii}}_{0} p_i^2$$

$PAY(p,q)$

$$\begin{bmatrix} 0 & & & & & & \\ & 0 & & & & & \\ & & 0 & & & & \\ & & & 0 & & & \\ & & & & 0 & & \\ & & & & & 0 & \\ & & & & & & 0 \end{bmatrix}$$

$p_A \le 0$, $p_B \ge 0$ & $p_A = p_B = 0$

Latin Square $\subseteq$ Magic Square Games

Every row and column sum are the same.

$m = n$

$\underline{p} = \left(\frac{1}{m}, \frac{1}{m}, \ldots, \frac{1}{m}\right)$

$\underline{q} = \left(\frac{1}{m}, \frac{1}{m}, \ldots, \frac{1}{m}\right)$