

Problem J. Left 4 Dead 2

Elitedj and his three roommates like to play Left 4 Dead 2. Left 4 Dead 2 is a shooting game with four special monsters.

- Tank, it's huge body with thick arms, HP is **98000**
- Boomer, fat as a ball, it will spray bile when killed, HP is **9800**
- Witch, likes crying alone, HP is **980**
- Smoker, attacks humans with extremely long tongues, HP is **98**

There is a contest of Left 4 Dead 2 in this weekend. There are n teams in the competition, every two teams will play a match, each team will have 4 numbers indicating the team's performance, which are the number of four monsters killed by the player.

The ranking of the game is as follows

- Sort by the number of wins from the most to the least. The definition of wins is that the total HP of monsters killed is **strictly greater** than the opponent.
- If the number of wins is the same, sort by **hurt difference** from largest to smallest. The definition of **hurt difference** is that the sum of hp of monsters killed by the team minus the sum of hp of monsters killed by the opponent.
- If multiple teams have the most wins and the largest hurt difference, print "No winner", else print the index of the winning team.

Input

The first line contains a single integer $T(1 \leq T \leq 10)$ — the number of test cases.

For each case, the first line contains a single integer $n(1 \leq n \leq 100)$ — the number of teams.

Next is an $n * n$ matrix a , the row number and column number of the matrix start from 1, the row number from top to bottom, and the column number from left to right. Each item of the matrix consists of 4 integers — $t, b, w, s(0 \leq t, b, w, s \leq 10^5)$, which are separated by spaces. The $a_{i,j,t}, a_{i,j,b}, a_{i,j,w}, a_{i,j,s}$ represents the number of Tank, Boomer, Witch and Smoker killed by $team_i$ in the match between $team_i$ and $team_j$. Items in the same row of the matrix are separated by character '|'.

Output

The output contains T rows, and the output of the $i - th$ row represents the result of $case_i$. If multiple teams have the most wins and the largest hurt difference, print "No winner" (without the quotes), else print the index of the winning team.

Example

standard input	standard output
2	
2	
0 0 0 0 1 2 3 4	
2 1 4 3 0 0 0 0	2
2	No winner
0 0 0 0 1 1 1 1	
1 1 1 1 0 0 0 0	

Hint

For the first case, there are two teams, the sum of HP of the monsters killed by the first team is $1 * 98000 + 2 * 9800 + 3 * 980 + 4 * 98 = 120932$, the sum of HP of the monster killed by the second team is $2 * 98000 + 1 * 9800 + 4 * 980 + 3 * 98 = 210014$, so the number of wins for the first team is 0, for the second team is 1, so the second team is the winner, print 2.

For the second case, there are two teams, the sum of HP of the monsters killed by the first team and by the second team is the same, so the number of wins for these two team is 0. The hurt difference for the first team is $(1 * 98000 + 1 * 9800 + 1 * 980 + 1 * 98) - (1 * 98000 + 1 * 9800 + 1 * 980 + 1 * 98) = 0$, the hurt difference for the second team is also 0, so print "No winner" (without the quotes) in this case.