Problem G
Golden Tiger Claw
Time Limit: 8 Second

Omi, Raymondo, Clay and Kimiko are on new adventure- in search of new Shen Gong Wu. But Evil Boy Genius Jack Spicer is also there. Omi and Jack found the Shen Gong Wu at the same time so they rushed for it but alas they touched it at the same time. Then what? It is time for "Xiaolin Showdown".

Jack challenged Omi to play a game. The game is simple! There will be an N*N board where each cell in the board contains some number. They have to assign numbers to each row and column separately so that $w(i, j) \leq row(i) + col(j)$ where $w(i, j)$ is the number assigned to the cell located at i'th row and j'th column, $row(i)$ is the number assigned to i'th row and $col(j)$ is the number assigned to j'th column. That is simple isn't it? Well… the main part is that you have to minimize $\sum_{1 \leq i \leq n}(row(i) + col(i))$.

Jack has taken his favorite "Monkey Stuff" and Omi has taken "Golden Tiger Claw". With the help of this "Golden Tiger Claw", he can go anywhere in the world. He has come to you and seeking your help. Jack is using his computer to solve this problem. So do it quick! Find the most optimal solution for Omi so that you can also be part of history in saving the world from the darkness of evil.

Input:

Input contains 15 test cases. Each case starts with N. Then there are N lines containing N numbers each. All the numbers in input is positive integer within the limit 100 except N which can be at most 500.

Output:

For each case in the first line there will be N numbers, the row assignments. In the next line there will N column assignment. And at the last line the minimum sum should be given. If there are several possible solutions give any.

SAMPLE INPUT	OUTPUT FOR SAMPLE INPUT
2 1 1 1 1	1 1 0 0 2

Problemsetter: Md. Mahbubul Hasan
(Be careful about the output format. You may get Wrong Answer if you don't output properly)