

Colsum

Jojo have a table with $N \times N$ size. Every table have its own integer value in it. Jojo want to know the sum from each column. Jojo is bad at mathematics so he ask you to help him.

Format Input

Input start with integer T , the number of test cases. Each test case start with number N , the size of Jojo table. Then there will followed by N lines, each line with N integer.

Format Output

Each case starts with "Case #T: " followed by N integer separated with a single space, the i -th integer will describe the sum from column i .

Constraints

$1 \leq T \leq 10$

$1 \leq N \leq 1000$

It is guaranteed that the value in the table will always be between -1000 and 1000.

Sample Input 1	Sample Output 1
3 2 1 2 3 4 3 3 3 3 2 2 2 1 1 1 4 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Case #1: 4 6 Case #2: 6 6 6 Case #3: 28 32 36 40

Sample Input 2	Sample Output 2
3 1 10 3 -3 -2 -1 -1 -2 -3 -2 -1 -3 1 0	Case #1: 10 Case #2: -6 -5 -7 Case #3: 0

Note

There are no trailing spaces in each line.