Problem F Permutation

Input: Standard Input **Output:** Standard Output

Given N and K find the N'th permutation of the integers from 1 to K when those permutations are lexicographically ordered. N starts from 0. Since N is very large N will be represented by a sequence of K non-negative integers S_1, S_2, \ldots, S_k . From this sequence of integers N can be calculated with the following expression.

 $\sum_{1}^{K} Si * (K - t)!$

Input

First line of the input contains $T(\le 10)$ the number of test cases. Each of these test cases consists of 2 lines. First line contains a integer $K(1\le K\le 50000)$. Next line contains K integers S_1 , S_2 ,..., $S_k.(0\le S_i\le K-i)$.

Output

For each test case output contains N'th permutation of the integers from 1 to K. These K integers should be separated by a single space.

Sample Input

Output for Sample Input

4	3 2 1
3	2 1 3
2 1 0	3 2 4 1
3	2 4 3 1
1 0 0	
4	
2 1 1 0	
4	
1 2 1 0	

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