

11303 Permutation

Given a subsequence of a permutation of n elements $(1, 2, \dots, n)$, you have to find the K -th permutation in lexicographic order that contains the subsequence given.

For example: If you have 1, 3, 2 and n equals to 4 you can obtain these permutations:

- 1, 3, 2, 4
- 1, 3, 4, 2
- 1, 4, 3, 2
- 4, 1, 3, 2

Input

Input file contains several test cases. The first line of the test case contains three integers n ($1 \leq n \leq 250$), m ($0 < m \leq n$) m is the number of the elements of the subsequence and K , in the next line contains m integers.

Output

For each test case write a K -th permutation that satisfies the condition, one per line.

Notice: K -th position always exists.

Sample Input

```
4 3 1
1 3 2
4 3 3
1 3 2
4 3 4
1 3 2
8 4 1000
8 2 4 1
```

Sample Output

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