

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
```