PROBLEM H. GROUPING

Time limit: 1 second

There are n teams participating in an international sport tournament. Teams are numbered from 1 to n and team i has s_i members. In an exchange event, the tournament committee decided to organize a game. To play the game, players must be divided into groups. Each group must have exactly k members and no 2 members are from the same team. It is not required to participate so some may not take part in. At the start, only R teams $1, 2, \dots, R$ participated. As the game becomes more exciting, teams $R+1, R+2, \dots, n$ sequentially register to participate. The committee wants to reorganize the groups every time a new team joins. The number of groups should be maximized and still satisfy the requirements above (each group has exactly k members and no 2 members are from the same team).

You are given $s_1, s_2, \dots, s_n$ and R, help the committee calculate the maximum possible number of groups after each team join.

Input

The first input line contains a positive integer T, the number of test cases. T groups of lines followed, each describes a test case. Each test case consists of:

- The first line contains there positive integers n, k, R ($n > 2, k \leq 100, R < n$).
- The second line contains n positive integers s_i ($1 \leq s_i \leq 10^9, i = 1, 2, \dots, n$).

The sum of all n over T test cases does not exceed 100000.

Output

Output T lines, each line consists of $n - R$ integers where the j-th number is the maximum possible number of groups after team $R + j$ join.

Sample

INPUT	OUTPUT
1 5 4 4 4 4 4 4 4	5