# Problems of Modern Times

Time: 1 second
Memory: 13 MB

The **evil** TAs of *DS-Domain* are back with their set of problems. But, this time they have decided to give you simple tasks. They have given you bags full of items. You have to sort these bags in increasing order of their weights. Simple, enough, eh?

There are **N** bags. Each bag has **M** items. (M can be different for different bags.) The weight of each item is given. The weight of a bag, is the sum of weight of all the items inside the bag, modulo some MOD.

Bags are in sorted order, iff bags with less weight occur before bags with more weight. In case of bags with equal weight, keep them in the order in which they come, i.e., bags which come before are kept before.

**Input format:**
The first line contains two space separated, **N and MOD.**
Then follows the description of **N bags.**
The first line in the description of a bag, is an integer **M**, the number of items in the bag.
Then follow **M** lines, each line containing **W**, the weight of an item in the bag.

**Output format:**
Output the bags in sorted order.
The first line in the description of a bag is its weight.
Then follow M lines, each containing the weight of the items inside the bag (in the same order as in the input).
**Follow the description of the bag with an empty line.**

**Constraints:**
1 <= N <=1000
1<= M <=1000000
23<= MOD <=1000000007
0<= W <=1000000007

**PS: The input file will contain no more than 10^6 integers.**

**Sample Input**
4 1000000
2
1
2
1

3
2
5
6
4
1
2
3
4

**Sample Output**

3
1
2

3
3

10
1
2
3
4

11
5
6