Problem F

A Grouping Problem

Input: Standard Input
Output: Standard Output

You are given a set of **N** integers. You can take **K** different elements from them to make a group. Two groups will be different if there is at least one element which is not common to both. For example, if there are 4 elements – **a, b, c, d** and you are asked to take two elements then **ab**, **ad**, **bc**, **cd** are all valid and different groups. A grouping system is complete if for a particular **K**, number of different groups is the maximum. In the former case, {ab, bc, cd, bd, ad, ac} is a complete grouping system.

For a particular complete grouping system, the **fitness** is calculated in the following way –

1. Each group of a grouping system contributes a part – the multiplication of all numbers of that group
2. Contribution from all groups are added
3. The fitness is equivalent to *Total Contribution mod M*, M is the bounding parameter

In our example, for K = 2, the fitness is F_2 = *(ab+bc+cd+bd+ad+ac) mod M*. If K = 1, then fitness is F_1 = *(a+b+c+d) mod M.*

Here, in this problem you have to find the complete grouping system with maximum fitness.

Input

Each test case starts with two positive integer N (2<=N<=1000) and M ($1<=M<2^{31}$). In next few lines there will be N positive integers. Each integer will be at best 1000. Input will be terminated by a case where N=M=0.

Output

For each test case, print in a line the maximum fitness possible for a grouping system.

Sample Input	Output for Sample Input
4 10 1 2 3 4 4 100 1 2 3 4 4 6 1 2 3 4 0 0	5 50 5

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