Problem L
Honourable Arrays

You are given a set S containing N different positive integers. You are also given a positive integer K and a prime number M.

An array is said to be *honourable* if each of its elements is in S, and the product of all elements in the array is K modulo M.

For a given integer L, count the number of different honourable arrays with length L. Two arrays of length L are said to be different if there exists an index such that the elements in both arrays differ at that index. Output the count modulo $998\,244\,353$.

Input

The first line contains four integers N, K, M, and L ($1 \leq N, K < M$; $2 \leq M \leq 100\,000$; $1 \leq L \leq 10^9$; M is a prime). The second line contains N different integers representing S, each is a positive integer less than M.

Output

Output an integer representing the number of different honourable arrays modulo $998\,244\,353$.

Sample Input 1	Sample Output 1
2 1 3 4 1 2	8

Explanation of Sample 1: the different honourable arrays of size 4 are: $[1,1,1,1]$, $[1,1,2,2]$, $[1,2,1,2]$, $[1,2,2,1]$, $[2,1,1,2]$, $[2,1,2,1]$, $[2,2,1,1]$, $[2,2,2,2]$.

Sample Input 2	Sample Output 2
2 1 3 1000 1 2	510735315

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