

D. Levko and Sets

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Levko loves all sorts of sets very much.

Levko has two arrays of integers a_1, a_2, \dots, a_n and b_1, b_2, \dots, b_m and a prime number p . Today he generates n sets. Let's describe the generation process for the i -th set:

1. First it has a single number 1.
2. Let's take any element c from this set. For all j ($1 \leq j \leq m$) if number $(c \cdot a_i^{b_j}) \bmod p$ doesn't occur in the set, then add it to the set.
3. Repeat step 2 as long as we can add at least one element to our set.

Levko wonders, how many numbers belong to at least one set. That is, he wants to know what size is the union of n generated sets.

Input

The first line contains three integers n, m and p ($1 \leq n \leq 10^4$, $1 \leq m \leq 10^5$, $2 \leq p \leq 10^9$), p is prime.

The second line contains space-separated integers a_1, a_2, \dots, a_n ($1 \leq a_i < p$). The third line contains space-separated integers b_1, b_2, \dots, b_m ($1 \leq b_i \leq 10^9$).

Output

The single number — the size of the union of the sets.

Examples

input
1 1 7 2 5
output
3

input
1 2 7 2 2 4
output
3

input
2 1 7 1 6 2
output
1

input

2 1 7
1 6
5

output

2