A. DZY Loves Hash

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

DZY has a hash table with p buckets, numbered from 0 to $p - 1$. He wants to insert n numbers, in the order they are given, into the hash table. For the i-th number x_i, DZY will put it into the bucket numbered $h(x_i)$, where $h(x)$ is the hash function. In this problem we will assume, that $h(x) = x \ mod \ p$. Operation $a \ mod \ b$ denotes taking a remainder after division a by b.

However, each bucket can contain no more than one element. If DZY wants to insert an number into a bucket which is already filled, we say a "conflict" happens. Suppose the first conflict happens right after the i-th insertion, you should output i. If no conflict happens, just output `-1`.

Input

The first line contains two integers, p and n $(2 \le p, n \le 300)$. Then n lines follow. The i-th of them contains an integer x_i $(0 \le x_i \le 10^9)$.

Output

Output a single integer — the answer to the problem.

Examples

input
10 5 0 21 53 41 53
output
4

input
5 5 0 1 2 3 4
output
-1