B. Counting-out Rhyme

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

n children are standing in a circle and playing the counting-out game. Children are numbered clockwise from 1 to n. In the beginning, the first child is considered the leader. The game is played in k steps. In the i-th step the leader counts out a_i people in clockwise order, starting from the next person. The last one to be pointed at by the leader is eliminated, and the next player after him becomes the new leader.

For example, if there are children with numbers $[8, 10, 13, 14, 16]$ currently in the circle, the leader is child 13 and $a_i = 12$, then counting-out rhyme ends on child 16, who is eliminated. Child 8 becomes the leader.

You have to write a program which prints the number of the child to be eliminated on every step.

Input

The first line contains two integer numbers n and k ($2 \le n \le 100$, $1 \le k \le n$ - 1).

The next line contains k integer numbers $a_1, a_2, ..., a_k$ ($1 \le a_i \le 10^9$).

Output

Print k numbers, the i-th one corresponds to the number of child to be eliminated at the i-th step.

Examples

input
```
7 5
10 4 11 4 1
```
output
```
4 2 5 6 1
```

input
```
3 2
2 5
```
output
```
3 2
```

Note

Let's consider first example:

- In the first step child 4 is eliminated, child 5 becomes the leader.
- In the second step child 2 is eliminated, child 3 becomes the leader.
- In the third step child 5 is eliminated, child 6 becomes the leader.
- In the fourth step child 6 is eliminated, child 7 becomes the leader.
- In the final step child 1 is eliminated, child 3 becomes the leader.