E. Maximum Subsequence

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

You are given an array a consisting of n integers, and additionally an integer m. You have to choose some sequence of indices $b_1, b_2, ..., b_k$ ($1 \le b_1 < b_2 < ... < b_k \le n$) in such a way that the value of is maximized. Chosen sequence can be empty.

Print the maximum possible value of .

Input

The first line contains two integers n and m ($1 \le n \le 35$, $1 \le m \le 10^9$).

The second line contains n integers $a_1, a_2, ..., a_n$ ($1 \le a_i \le 10^9$).

Output

Print the maximum possible value of .

Examples

input
4 4 5 2 4 1

output
3

input
3 20 199 41 299

output
19

Note

In the first example you can choose a sequence $b = \{1, 2\}$, so the sum is equal to 7 (and that's 3 after taking it modulo 4).

In the second example you can choose a sequence $b = \{3\}$.