

A. XXXXX

time limit per test: 1 second
memory limit per test: 256 megabytes

Ehab loves number theory, but for some reason he hates the number x . Given an array a , find the length of its longest subarray such that the sum of its elements **isn't** divisible by x , or determine that such subarray doesn't exist.

An array a is a subarray of an array b if a can be obtained from b by deletion of several (possibly, zero or all) elements from the beginning and several (possibly, zero or all) elements from the end.

Input

The first line contains an integer t ($1 \leq t \leq 5$) — the number of test cases you need to solve. The description of the test cases follows.

The first line of each test case contains 2 integers n and x ($1 \leq n \leq 10^5, 1 \leq x \leq 10^4$) — the number of elements in the array a and the number that Ehab hates.

The second line contains n space-separated integers a_1, a_2, \dots, a_n ($0 \leq a_i \leq 10^4$) — the elements of the array a .

Output

For each testcase, print the length of the longest subarray whose sum isn't divisible by x . If there's no such subarray, print -1 .

Example

input

Copy

3
3 3
1 2 3
3 4
1 2 3
2 2
0 6

output

Copy

2
3
-1

Note

In the first test case, the subarray $[2, 3]$ has sum of elements 5, which isn't divisible by 3.

In the second test case, the sum of elements of the whole array is 6, which isn't divisible by 4.

In the third test case, all subarrays have an even sum, so the answer is -1 .

Codeforces Round 649 (Div. 2)

Finished

Practice

Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

Submit?

Language: GNU G++20 13.2 (64 bit, win)

Choose file: Choose File No file chosen

Submit

Last submissions

Submission	Time	Verdict
251322585	Mar/15/2024 02:28	Accepted
251322266	Mar/15/2024 02:22	Wrong answer on test 2

Problem tags

brute force data structures number theory two pointers *1200

No tag edit access

Contest materials

Announcement (en)

Tutorial (en)