



HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

P

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS STANDINGS CUSTOM INVOCATION

G. Build an Array

time limit per test: 1 second memory limit per test: 512 megabytes

Yesterday, Dima found an empty array and decided to add some integers to it. He can perform the following operation an unlimited number of times:

- · add any integer to the left or right end of the array.
- then, as long as there is a pair of identical adjacent elements in the array, they will be replaced by their sum.

It can be shown that there can be at most one such pair in the array at the same time.

For example, if the array is [3,6,4] and we add the number 3 to the left, the array will first become [3,3,6,4], then the first two elements will be replaced by 6, and the array will become [6,6,4], and then — [12,4].

After performing the operation **exactly** k times, he thinks he has obtained an array a of length n, but he does not remember which operations he applied. Determine if there exists a sequence of k operations that could result in the given array a from an empty array, or determine that it is impossible.

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of test cases. The descriptions of the test cases follow.

The first line of each test case description contains two integers n and k ($1 \le n \le 10^5$, $n \le k \le 10^6$) — the length of the resulting array and the number of operations.

The second line contains n integers a_i ($1 \le a_i \le 10^9, a_{i-1} \ne a_i$) — the elements of the resulting array.

It is guaranteed that the sum of the values of n across all test cases does not exceed 10^5 .

Output

For each test case, if there is no suitable sequence of operations of length k, output "NO". Otherwise, output "YES".

You may output "YES" and "NO" in any case (for example, the strings "yEs", "yes", "Yes", and "YES" will be recognized as a positive answer).

Example



Codeforces Round 1027 (Div. 3)

Finished

Practice



→ Virtual participation

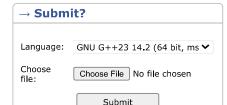
Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you solve these problems in the archive. If you just want to solve some problem from a 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

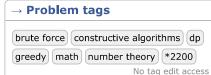
→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest



→ Last submissions		
Submission	Time	Verdict
322407561	Jun/01/2025 17:22	Accepted





Codeforces (c) Copyright 2010-2025 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Jun/01/2025 21:22:55^{UTC+7} (k1).
Desktop version, switch to mobile version.
Privacy Policy | Terms and Conditions

Supported by



