# Problem B. Origami

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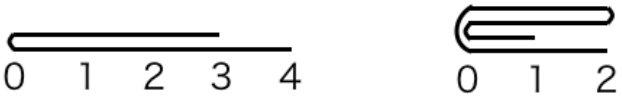
|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 2 seconds |
| Memory limit: | 256 mebibytes |

Chiaki has a very big sheet of paper. This sheet has a form of rectangle with dimensions $1 \times n$, with numbers from 1 to $n$ written in each $1 \times 1$ grid square, in the order from left to right.


Chiaki would like to fold the paper using the following operations:

1. Fold the sheet of paper at position $p_i$ to the right. After this operation, the leftmost part of the paper with dimensions $1 \times p_i$ must be above the rightmost part of the paper with dimensions $1 \times ([\textit{current width of sheet}] - p_i)$.
2. Fold the sheet of paper at position $p_i$ to the left. After this operation, the rightmost part of the paper with dimensions $1 \times ([\textit{current width of sheet}] - p_i)$ must be above the leftmost part of the paper with dimensions $1 \times p_i$.




After Chiaki performed the above operations several times, the sheet of paper was folded into an $1 \times 1$ square. If we now write down the number on each square from top to bottom, we will get a permutation of numbers from 1 to $n$.

Now, given a permutation of numbers from 1 to $n$, Chiaki would like to know whether it is possible to obtain the permutation using the above operations.

## Input

There are multiple test cases. The first line of the input contains an integer $T$, indicating the number of test cases. For each test case:

The first line contains an integer $n$ ($1 \le n \le 10^6$), indicating the length of the paper.

The second line contains $n$ integers $a_1, a_2, \ldots, a_n$, which together constitute a permutation of numbers from 1 to $n$, indicating the integers written in the grid squares of the resulting sheet of paper from top to bottom.

It is guaranteed that the sum of $n$ in all test cases will not exceed $10^6$.

## Output

For each test case, output one line. If it is possible to obtain the permutation, output "`Yes`" (without the quotes), otherwise output "`No`" (without the quotes).

## Example

| standard input | standard output |
|---|---|
| 3<br>4<br>2 1 4 3<br>7<br>2 5 4 3 6 1 7<br>4<br>1 3 2 4 | Yes<br>Yes<br>No |