

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

A. Circle of Students

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are n students standing in a circle in some order. The index of the i -th student is p_i . It is guaranteed that all indices of students are distinct integers from 1 to n (i. e. they form a permutation).

Students want to start a round dance. A **clockwise** round dance can be started if the student 2 comes right after the student 1 in clockwise order (there are no students between them), the student 3 comes right after the student 2 in clockwise order, and so on, and the student n comes right after the student $n - 1$ in clockwise order. A **counterclockwise** round dance is almost the same thing — the only difference is that the student i should be right after the student $i - 1$ in counterclockwise order (this condition should be met for every i from 2 to n).

For example, if the indices of students listed in clockwise order are $[2, 3, 4, 5, 1]$, then they can start a clockwise round dance. If the students have indices $[3, 2, 1, 4]$ in clockwise order, then they can start a counterclockwise round dance.

Your task is to determine whether it is possible to start a round dance. Note that the students cannot change their positions before starting the dance; they cannot swap or leave the circle, and no other student can enter the circle.

You have to answer q independent queries.

Input

The first line of the input contains one integer q ($1 \leq q \leq 200$) — the number of queries. Then q queries follow.

The first line of the query contains one integer n ($1 \leq n \leq 200$) — the number of students.

The second line of the query contains a permutation of indices p_1, p_2, \dots, p_n ($1 \leq p_i \leq n$), where p_i is the index of the i -th student (in clockwise order). It is guaranteed that all p_i are distinct integers from 1 to n (i. e. they form a permutation).

Output

For each query, print the answer on it. If a round dance can be started with the given order of students, print "YES". Otherwise print "NO".

Example

input	Copy
<pre>5 4 1 2 3 4 3 1 3 2 5 1 2 3 5 4 1 1 5 3 2 1 5 4</pre>	
output	Copy

Codeforces Round #579 (Div. 3)

Finished

→ 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

→ Problem tags

implementation

*1100

No tag edit access

→ Contest materials

• Announcement #1 (en)

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• Announcement #2 (ru)

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• Announcement #3 (en)

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• Announcement #4 (ru)

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• Tutorial #1 (en)

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• Tutorial #2 (ru)

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• Tutorial #3 (en)

×

• Tutorial #4 (ru)

×

YES
YES
NO
YES
YES

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