A permutation of n is a bijective function of the initial n natural numbers: $0, 1, \ldots, n - 1$. A permutation p is called antiarithmetic if there is no subsequence of it forming an arithmetic progression of

length bigger than 2, i.e. there are no three indices $0 \le i < j < k < n$ such that (p_i, p_j, p_k) forms an arithmetic progression.

For example, the sequence $(2, 0, 1, 4, 3)$ is an antiarithmetic permutation of 5. The sequence $(0, 5, 4, 3, 1, 2)$ is not an antiarithmetic permutation as its first, fifth and sixth term $(0, 1, 2)$ form an arithmetic progression; and so do its second, forth and fifth term $(5, 3, 1)$.

Your task is to check whether a given permutation of n is antiarithmetic.

Input

There are several test cases, followed by a line containing 0. Each test case is a line of the input file containing a natural number $3 \le n \le 10000$ followed by a colon and then followed by n distinct numbers separated by whitespace. All n numbers are natural numbers smaller than n.

Output

For each test case output one line with 'yes' or 'no' stating whether the permutation is antiarithmetic or not.

Sample Input

```
3: 0 2 1
5: 2 0 1 3 4
6: 2 4 3 5 0 1
0
```

Sample Output

```
yes
no
yes
```