

## Problem D: Antiarithmetic?

A permutation of  $n$  is a bijective function of the initial  $n$  natural numbers:  $0, 1, \dots, n-1$ . 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  $0 \leq i < j < k < n$  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.

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  $3 \leq n \leq 10000$  followed by a colon and then followed by  $n$  distinct numbers separated by whitespace. All  $n$  numbers are natural numbers smaller than  $n$ .

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
```

### Output for sample input

```
yes
no
yes
```

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