

Tayank and Gambling

Assignment 1

Data Structures

Due date: 10 January, 2019

Problem Statement: Tayank is a professional but not-so-good gambler. He lost all his money today. For the last round, he decided to bet on his kidney. He wants to win badly so he asks you for your help.

He can only win if you can order the array of natural numbers of size N in non-decreasing order by only using transform operation. A transform operation is defined as rotate any sub-array of size 3 in cyclic order. For example: 1 2 3 4 5 after transform might become 3 1 2 4 5, or, 1 2 5 3 4.

Tell Tayank if he can win the bet and save his kidney!!

Input

First line contains the number of test cases T . Each of these T test cases have 1st line as the number of elements in array N , then in the next line there are N space separated numbers a_i .

Output

0 if it is impossible to win and 1 if possible.

Constraints

$$1 \leq T \leq 10$$

$$1 \leq N \leq 30000$$

$$1 \leq a_i \leq 1000000$$

Time Limit: 1 sec

Memory Limit: 256 MB

Sample Test Case

Input	Output
4	1
3	1
1 2 3	1
3	0
3 1 2	
5	
1 3 4 2 5	
5	
1 2 4 3 5	