New Year Chaos

Problem Statement

It's New Year's Day and everyone's in line for the Wonderland rollercoaster ride!

There are n people queued up, and each person wears a sticker indicating their *initial* position in the queue (i.e.: $1, 2, ... , n-1, n$ with the first number denoting the frontmost position).

Any person in the queue can bribe the person *directly in front* of them to swap positions. If two people swap positions, they still wear the same sticker denoting their original place in line. One person can bribe *at most two other persons*.

That is to say, if $n=8$ and $Person \ 5$ bribes $Person \ 4$, the queue will look like this: $1, 2, 3, 5, 4, 6, 7, 8$.

Fascinated by this chaotic queue, you decide you must know the minimum number of bribes that took place to get the queue into its current state!

Note: Each $Person \ X$ wears sticker X, meaning they were initially the X^{th} person in queue.

Input Format

The first line contains an integer, T, denoting the number of test cases.
Each test case is comprised of two lines; the first line has n (an integer indicating the number of people in the queue), and the second line has n space-separated integers describing the final state of the queue.

Constraints

$1 \le T \le 10$
$1 \le n \le 10^5 $

Subtasks

For 60% score $1 \le n \le 10^3 $
For 100% score $1 \le n \le 10^5 $

Output Format

Print an integer denoting the minimum number of bribes needed to get the queue into its final state; print **Too chaotic** if the state is invalid (requires $Person \ X$ to bribe more than 2 people).

Sample Input

```
2
5
2 1 5 3 4
5
2 5 1 3 4
```

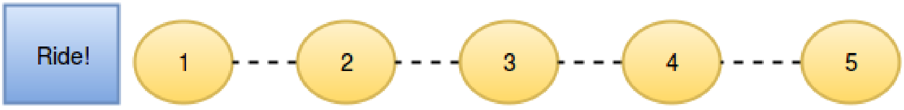
Sample Output

```
3
Too chaotic
```

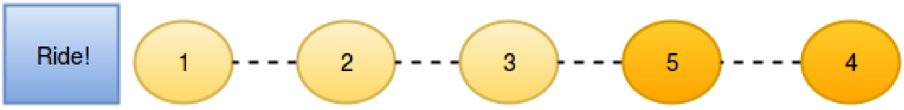
Explanation

Sample 1

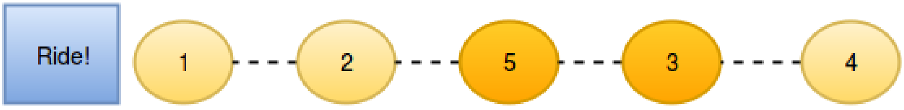
The initial state:



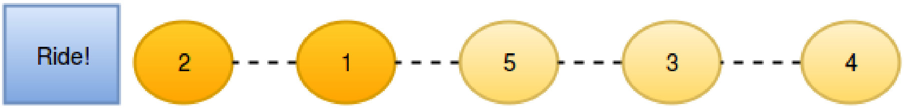
After person 5 moves one position ahead by bribing person 4:



Now person 5 moves another position ahead by bribing person 3:



And person 2 moves one position ahead by bribing person 1:



So the final state is $2, 1, 5, 3, 4$ after three bribing operations.

Sample 2

No person can afford to bribe more than two people, so its not possible to achieve the input state.