New Year Chaos

It is New Year's Day and people are in line for the Wonderland rollercoaster ride. Each person wears a sticker indicating their *initial* position in the queue from 1 to n. Any person can bribe the person *directly in front* of them to swap positions, but they still wear their original sticker. One person can bribe *at most two others*.

Determine the minimum number of bribes that took place to get to a given queue order. Print the number of bribes, or, if anyone has bribed more than two people, print `Too chaotic`.

Example

$q = [1, 2, 3, 5, 4, 6, 7, 8]$

If person 5 bribes person 4, the queue will look like this: $1, 2, 3, 5, 4, 6, 7, 8$. Only 1 bribe is required. Print `1`.

$q = [4, 1, 2, 3]$

Person 4 had to bribe 3 people to get to the current position. Print `Too chaotic`.

Function Description

Complete the function *minimumBribes* in the editor below.

minimumBribes has the following parameter(s):

- *int q[n]*: the positions of the people after all bribes

Returns

- No value is returned. Print the minimum number of bribes necessary or `Too chaotic` if someone has bribed more than 2 people.

Input Format

The first line contains an integer t, the number of test cases.

Each of the next t pairs of lines are as follows:
- The first line contains an integer t, the number of people in the queue
- The second line has n space-separated integers describing the final state of the queue.

Constraints

- $1 \leq t \leq 10$
- $1 \leq n \leq 10^5$

Subtasks

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

Sample Input

```
STDIN       Function
-----       --------
2           t = 2
5           n = 5
2 1 5 3 4   q = [2, 1, 5, 3, 4]
5           n = 5
2 5 1 3 4   q = [2, 5, 1, 3, 4]
```

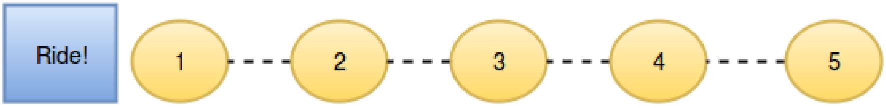
Sample Output

```
3
Too chaotic
```

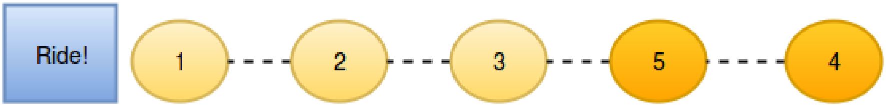
Explanation

Test Case 1

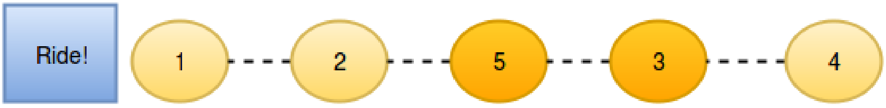
The initial state:



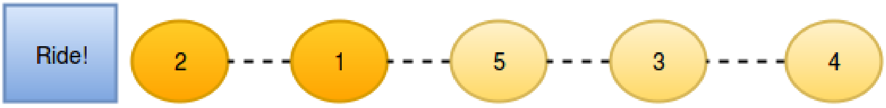
After person 5 moves one position ahead by bribing person 4:



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.

Test Case 2

No person can bribe more than two people, yet it appears person 5 has done so. It is not possible to achieve the input state.