

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
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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.