

Order

You are given permutation of **N** integers, that is, every number from 1 to N appears **exactly once** in the array. What is minimal number of swaps needed to sort the array ?

Constraints :

$N \leq 100$

Input

First number in the input is number **t** ($t \leq 100$), denoting number of test cases. Every test case looks as follows. First line is number N describing size of the array. N numbers follow, denoting the array.

Output

Output one number, minimal number of swaps.

Example

Input:

2

3

2 1 3

5

5 3 4 2 1

Output:

1

3

Explanation :

In the first case, we swap (1, 2). In second example, we swap (5,1), (3,2), (4,3).