

7037 The Problem Needs 3D Arrays

A permutation is a sequence of integers p_1, p_2, \dots, p_n , consisting of n distinct positive integers and each of them does not exceed n . Assume that $r(S)$ of sequence S denotes the number of inversions in sequence S (if $i < j$ and $S_i > S_j$, then the pair of (i, j) is called an inversion of S), $l(S)$ of sequence S denotes the length of sequence S . Given a permutation P of length n , it's your task to find a subsequence S of P with maximum $\frac{r(S)}{l(S)}$. A subsequence of P is a sequence $(p_{i_1}, p_{i_2}, \dots, p_{i_t})$ which satisfies that $0 < i_1 < i_2 < \dots < i_t \leq n$.

Input

The first line of the input gives the number of test cases, T . T test cases follow.

For each test case, the first line contains an integer n ($1 \leq n \leq 100$), the length of the permutation P . The second line contains n integers p_1, p_2, \dots, p_n , which represents the permutation P .

Output

For each test case, output one line containing 'Case # x : y ', where x is the test case number (starting from 1) and y is the maximum $\frac{r(S)}{l(S)}$.

Your answer will be considered correct if it is within an absolute error of 10^{-6} of the correct answer.

Sample Input

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1
5
3 4 2 5 1
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Sample Output

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Case #1: 1.250000000000
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