Problem C. The Problem Needs 3D Arrays

Description

A permutation is a sequence of integers $p_1, p_2, \ldots, p_n$, 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 $(p_{i_1}, p_{i_2}, \ldots, p_{i_t})$ which satisfies that $0 < i_1 < i_2 < \ldots < i_t \leq n$.

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 $p_1, p_2, \ldots, p_n$, 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.

Samples

Sample Input	Sample Output
1 5 3 4 2 5 1	Case #1: 1.250000000000