Perfect Ranges

A pair of arrays A and B, both of length N, are called perfect if it is possible to form an array C of length N satisfying the following conditions:

- $C_i = A_i$ or $C_i = B_i$ for each $1 \leq i \leq N$
- $C_i < C_{i+1}$ for each $1 \leq i < N$

You are given 2 arrays A and B of length N. It is guaranteed that each element from 1 to $2 \cdot N$ either occurs once in A or occurs once in B.

Find how many pairs L and R exist such that:

- $1 \leq L \leq R \leq N$
- The pair of arrays $A[L, R]$ and $B[L, R]$ are perfect.

Here, $A[L, R]$ represents the subrange $[A_L, A_{L+1}, \ldots, A_R]$ of the array A.

Input Format

- The first line of input will contain a single integer T, denoting the number of test cases.
- Each test case consists of multiple lines of input.
  - The first line of input contains a single integer N - the size of the arrays.
  - The second line contains N integers - $A_1, A_2, \ldots, A_N$.
  - The third line contains N integers - $B_1, B_2, \ldots, B_N$.

Output Format

For each test case, output on a new line the number of L and R, such that corresponding subranges in A and B are perfect.

Constraints

- $1 \leq T \leq 10^4$
- $2 \leq N \leq 2 \cdot 10^5$
- $1 \leq A_i, B_i \leq 2 \cdot N$
- $A_i \neq A_j, B_i \neq B_j$ for any $1 \leq i < j \leq N$
- $A_i \neq B_j$ for any $1 \leq i, j \leq N$
- The sum of N over all test cases does not exceed $2 \cdot 10^5$.

Sample 1:

Input	Output
3 3 2 6 4 3 1 5 3	5 6 3