

Composition

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 1024 megabytes

Little Cyan Fish would like to study the art of composition. After learning how to compute the composition of formal power series in $O(n \log^2 n)$ time, Little Cyan Fish would like to ask you the following question.

Consider two sequences, A and B , each solely consisting of the uppercase letters “C” and “P”. The *composition* of A and B is defined as a new sequence, C , of length $|A| + |B|$. This sequence C must include a subsequence that is exactly equal to A , and the elements not part of this subsequence should form the sequence B . A subsequence in C that corresponds to A or B does not need to be contiguous.

For instance, given the sequences $A = [1, 2, 3]$ and $B = [4, 5]$, valid compositions (C) could be $[1, 4, 2, 5, 3]$, $[4, 5, 1, 2, 3]$, or $[4, 1, 5, 2, 3]$. However, $[1, 2, 3, 4, 3]$ and $[1, 2, 3, 5, 4]$ would not be considered valid compositions as they fail to properly integrate A or B as required.

Now, Little Cyan Fish asks you to construct a possible *composition* of the sequence A and B (denoted by C), that minimizes the number of adjacent element pairs within C that are distinct (i.e., where $C_i \neq C_{i+1}$).

Input

There are multiple test cases in a single test file. The first line of the input contains a single integer T ($1 \leq T \leq 10^5$), indicating the number of test cases.

For each test case, the first line of the input contains a single string A .

The next line of the input contains a single string B .

It is guaranteed that both string A and B contain “C” and “T” only, and the sum of $|A| + |B|$ over all test cases does not exceed 10^6 .

Example

standard input	standard output
2	5
CCPC	0
CPCPCP	
CCCCCCC	
CCCCC	