Problem H. Happy Halloween

Time limit: 1 second
Memory limit: 1024 mebibytes

To celebrate Halloween, KAIST's game club **RUN** will compete against the **cenix fan club** in a game. N members of RUN are standing in a line. In another line, M **cenix fan club** members are waiting to face them. The two teams will play a game of Rock-Umbrella-Needles.

Number the RUN members from 1 to N in order from the front of their line, and number the cenix fan club members from 1 to M in the same way.

In Rock-Umbrella-Needles, two players each play one of three moves: Rock (`R`), Umbrella (`U`), or Needles (`N`). The winner is determined by the following cyclic dominance relation:

$$\texttt{R} < \texttt{U} < \texttt{N} < \texttt{R}$$

That is, Umbrella beats Rock, Needles beat Umbrella, and Rock beats Needles. If both players play the same move, the round ends in a tie.

Each player has a fixed move that never changes. RUN member i always plays A_i, and cenix fan club member i always plays B_i, where each move is one of `R`, `U`, and `N`.

The game proceeds in rounds. In each round, the players currently at the front of the two lines play against each other.

If one player wins the round, the losing player is eliminated and removed from their line. The winning player remains in the game and stays at the front of their line for the next round.

If the round ends in a tie, both players are eliminated and removed from their respective lines.

After each round, if both lines are still non-empty, another round is played between the players now at the front of the two lines.

The game ends as soon as at least one line becomes empty. If exactly one line is empty, that team loses and the other team wins. If both lines become empty after the same round, the game ends in a draw.

As their club name suggests, the members of RUN are experts at Rock-Umbrella-Needles, and if the game were played without any handicap, their team would never lose. To give the cenix fan club a chance, RUN has agreed to remove some of its members before the game begins.

You may choose a non-empty interval $[l, r]$ with $1 \le l \le r \le N$ and remove RUN members $l, l+1, \ldots, r$ before the game starts. All other RUN members remain in their original relative order.

Your goal is to make the cenix fan club win.

Find an interval $[l, r]$ with the minimum possible length such that removing RUN members $l, l+1, \ldots, r$ makes the cenix fan club win. Note that removing all RUN members will always make the cenix fan club win.

Input

Each test contains multiple test cases.

The first line contains an integer t — the number of test cases.

Each test case is described as follows.

The first line contains a string A of length N, where A_i is the fixed move played by RUN member i.

The second line contains a string B of length M, where B_i is the fixed move played by cenix fan club member i.

Output

For each test case, print two integers l and r separated by a space on a separate line.

They must satisfy $1 \le l \le r \le N$, and removing RUN members $l, l+1, \ldots, r$ before the game begins must make the cenix fan club win.

Among all such intervals, $r - l + 1$ must be as small as possible.

If there are multiple valid answers, print any of them.

Constraints

- $1 \le t \le 3 \cdot 10^4$
- $1 \le N, M \le 261\,031$
- Both A and B consist only of the characters `R`, `U`, and `N`.
- The cenix fan club does not win unless at least one RUN member is removed.
- The sum of N over all test cases does not exceed 261 031.
- The sum of M over all test cases does not exceed 261 031.

Example

standard input	standard output
3 RUN UUUUUU RUNRUNRUNRUN UUUUNNNNRRRR RRRRR RRR	3 3 3 9 1 3