Problem K. LR String

Time limit: 2 seconds
Memory limit: 1024 megabytes

Gamenjoy has a favorite string consisting of only "L"s and "R"s.

However, Gamenjoy's naughty brother, Gamanyong, has modified the string. Formally, he does several (possibly zero) operations where each operation can be one of the following:

- Choose a character "L" in the string which is not the first character and delete the character immediately to its left.
- Choose a character "R" in the string which is not the last character and delete the character immediately to its right.

When Gamenjoy returns home, he can't distinguish which one is his favorite string anymore. Luckily, he remembers what the string looked like before his brother modified it. Gamenjoy finds q strings at home and asks their father, Oibuth, whether each string could possibly be his favorite string. Oibuth now turns to you for help. Please help him answer Gamenjoy's questions.

Input

The first line contains one integer T ($1 \le T \le 10^5$), representing the number of test cases.

For each test case, the first line contains a string s ($1 \le |s| \le 5 \cdot 10^5$), consisting of only "L"s and "R"s, representing the original string.

The second line contains an integer q ($1 \le q \le 5 \cdot 10^5$), representing the number of strings in Gamenjoy's home.

The i-th of the following q lines contains a string t_i ($1 \le |t_i| \le |s|$) consisting of only "L"s and "R"s, representing a string in Gamenjoy's home.

It is guaranteed that the sum of $|s|$, the sum of q, and the sum of $|t_i|$ over all test cases do not exceed 10^6.

Output

For each string in Gamenjoy's home, output "YES" if the string could be his favorite string. Otherwise, output "NO".

Example

standard input	standard output
2 RRLLRRLL 4 LLLLL LLR LRLR R RLLLLLL 3 LLLLL RL RRL	NO YES NO YES YES YES NO