

Jarawi and The Interview

Time limit: 2000 ms
Memory limit: 256 MB

Today Jarawi had a job interview for a very important tech company, the interviewer asked him to solve the next problem:

Given a string s ($1 \leq |s| \leq 10^6$), answer q ($1 \leq q \leq 5 * 10^4$) queries. For each query he received a string p_i ($1 \leq |p_i| \leq 100$) and he had to determine the size of the longest suffix of p_i which is a **subsequence** of s (a suffix of a string is a **substring** that occurs at the end).

Unfortunately Jarawi could not solve the task, so he wants to know if you can solve it.

Standard input

The first line contains a string s .

The second line contains an integer q .

Each of the next q lines contains a string p_i .

Standard output

For each query you need to print the size of the longest suffix of p_i which is a subsequence of s .

Constraints and notes

- $1 \leq |s| \leq 10^6$
- $1 \leq q \leq 5 * 10^4$
- $1 \leq |p_i| \leq 100$
- All strings contain only lower case letters of the English alphabet.

Input	Output	Explanation
xaybaba 2 aaba yx	4 1	The first query is "aaba" which has the next suffixes {"a", "ba", "aba", "aaba"}, all of them are subsequence of "xaybaba", so the longest has size 4. The second query is "yx" which has the next suffixes {"x", "yx"}, only "x" is subsequence of "xaybaba" and it has size 1.