Problem B. String

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given two strings S_1 and S_2 of equal length (indexed from 1).

Now you need to answer q queries, with each query consists of a string T.

The query asks how many triplets of integers (i, j, k) $(1 \le i \le j < k \le |S_1|)$ satisfy the condition $S_1[i, j] + S_2[j + 1, k] = T$.

Here $S[l, r]$ denotes the substring of S with index form l to r, and "+" denotes concatenation of strings.

Input

The first line contains a string S_1 .

The second line contains a string S_2 .

It is guaranteed that $1 \le |S_1| = |S_2| \le 10^5$.

The third line contains a positive integer q $(1 \le q \le 2 \times 10^5)$, representing the number of queries.

The next q lines each contain a string T $(1 \le |T| \le 2 \times 10^5)$, representing the query strings.

It is guaranteed that $\sum |T| \le 2 \times 10^5$ and all the strings input only consisting of lowercase letters.

Output

For each query, output a line with a positive integer representing the number of triplets that satisfy the condition.

Example

standard input	standard output
aaababaa aababbca 7 aa abb aab ab abc bb ba	3 1 3 2 2 1 0