Problem B
Another Substring Query Problem
Time Limit: 6 Seconds

You are given a string s and several queries.

Each query consists of a string t and an integer k. For each query, determine the k^{th} position in s where a substring matching t starts. If t occurs fewer than k times in s, print -1.

Input

The first line of input contains a single string s ($1 \leq |s| \leq 2 \cdot 10^5$), which is the queriable string. It will consist only of lower-case letters.

The next line of input contains a single integer q ($1 \leq q \leq 2 \cdot 10^5$), which is the number of queries that follow.

Each of the next q lines contains a string t ($1 \leq |t|$) and an integer k ($1 \leq k \leq |s|$). This represents a query for the k^{th} occurrence of t in s. The string t will consist only of lower-case letters. The sum of all $|t|$'s will be $\leq 2 \cdot 10^5$

Output

Output a single integer, which is the position of the start of the k^{th} occurrence of t in s, or -1 if t occurs fewer than k times in s. The first character in s is at position 1.

Sample Input 1	Sample Output 1
abacabadabacaba 4 a 7 e 3 bac 2 abada 1	13 -1 10 5

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