Problem B. Classic Quotation

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

When chatting online, we can save what somebody said to form his *classic quotation*. Little Q does this, too. And what's more, he can even change the original words. Formally, assume somebody said a string S of length n. Little Q will choose a continuous substring of S (possibly empty) and remove it, then concatenate the two remaining parts, obtaining a new string S'. For example, he might remove "`not `" from the string "`I am not SB`", so that the new string S' will be "`I am SB`".

After doing lots of such things, Little Q finds out that string T occurs as a continuous substring of S' very often.

Now given strings S and T, Little Q has k queries. Each query has the following format: given L and R, Little Q will remove a substring so that the two remaining parts are $S[1..i]$ and $S[j..n]$ where the pair of integers (i, j) is chosen equiprobably among all pairs where $1 \le i \le L$ and $R \le j \le n$. Your goal is to find E, the expected number of occurrences of T in the resulting string, and print the value $E \cdot L \cdot (n - R + 1)$.

All occurrences of T must taken into account even if they overlap. The queries are independent: the string S actually does not transform into S' and is the same for all queries.

Input

The first line of the input contains three integers n, m and k denoting the length of S, the length of T and the number of queries ($1 \le n \le 5 \cdot 10^4$, $1 \le m \le 100$, $1 \le k \le 5 \cdot 10^4$).

The next line contains a string S consisting of n lowercase English letters. The following line contains a string T consisting of m lowercase English letters. Each of the remaining k lines contains a query consisting of two integers L and R ($1 \le L < R \le n$).

Output

For each query, print a single line containing a single integer: the answer to the query.

Example

standard input	standard output
8 5 4 iamnotsb iamsb 4 7 3 7 3 8 2 7	1 1 0 0