

Problem L. String Distance

Input file: *standard input*
Output file: *standard output*
Time limit: 4 seconds
Memory limit: 512 mebibytes

For two strings S and T , you can do the following operation an arbitrary number of times: Select a string S or T , insert or delete a character at any position. The distance between two strings S and T is defined as the minimum number of operations to make S and T equal.

You will be given two strings $A[1..n]$ and $B[1..m]$, and also q queries.

In each query, you will be given two integers l_i and r_i ($1 \leq l_i \leq r_i \leq n$). You need to find the distance between the continuous substring $A[l_i..r_i]$ and the whole string B .

Input

The first line contains a single integer T ($1 \leq T \leq 10$), the number of test cases. For each test case:

The first line contains a string A which consists of n ($1 \leq n \leq 100\,000$) lower-case English letters.

The second line contains a string B which consists of m ($1 \leq m \leq 20$) lower-case English letters.

The third line contains a single integer q ($1 \leq q \leq 100\,000$) denoting the number of queries.

Each of the following q lines contains two integers l_i and r_i ($1 \leq l_i \leq r_i \leq n$) describing a query.

Output

For each query, print a single line containing an integer denoting the answer.

Example

standard input	standard output
1	4
qaqaqwqaqaq	2
qaqwqaq	0
3	
1 7	
2 8	
3 9	