Problem K. Kevin's Game

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

Kevin is playing a game on character strings. At the start of a game, a string of lowercase letters, called the target string, is given. Each of the players submits one string of lowercase letters, called a bullet string, of the specified length. The winner is the one whose bullet string marks the highest score.

The score of a bullet string is the sum of the points of all of its suffixes. When the bullet string is $b_1 b_2 \dots b_n$, the score for its suffix s_k starting with the k-th character ($1 \le k \le n$), $b_k b_{k+1} \dots b_n$, is the length of its longest common prefix with the target string. That is, with the target string $t_1 t_2 \dots t_m$, the score of s_k is p when $t_j = b_{k+j-1}$ for $1 \le j \le p$ and either $p = m, k + p - 1 = n$, or $t_{p+1} \ne b_{k+p}$ holds.

Write a program finds the highest achievable score for the given target string and the bullet length.

Input

The input consists of a single test case with two lines. The first line contains the non-empty target string of at most 2000 lowercase English letters. The second line contains the length of the bullet string, a positive integer not exceeding 2000.

Output

Output the highest achievable score for the given target string and the given bullet length.

Examples

standard input	standard output
ababc 6	10
aabaacaabaa 102	251