CONSTRUCT STRING

A subsequence is a string that can be derived from another string by deleting some or no characters without changing the order of the remaining characters.

For example: abc is a subsequence of abbac

You are given two strings s and t consisting of only lowercase English letters. Find the minimum number of characters that need to be appended to the end of s so that t becomes a subsequence of s.

Input

The first line is the string s ($0 \leq |s1| \leq 10^5$)

The second line is the string t ($0 \leq |s2| \leq 10^5$).

Both strings contain only lowercase characters.

Output

The minimum number of characters that need to be appended to the end of s so that t becomes a subsequence of s

Sample

Input	Output
abbac abc	0
baac abc	2
aaaaa abc	2
abcabc cba	1

Notes:

In the first sample, t is already a subsequence of s, so there is no need to add any characters.

In the second and the third samples, "bc" should be added to s

In last sample, "a" should to be added to s.