# Homework 6

(Time Limit: 1 second)

**Problem Description**

By convention, any sequence that results from deleting several (possibly zero) characters from a string is called a subsequence of . For example, “heo” and “ell” are subsequences of “hello”, whereas “eh” and “abc” are not.

Given two strings and , we want to find the length of a longest common subsequence of and .

Hint: Write and for the length of and , respectively. For all and , denote by the length of a longest common subsequence of the length- prefix of and the length- prefix of . As boundary conditions, for all and . For all and ,

if the th character of is the th character of , and

otherwise.

**Input Format**

Each test case contains two nonempty strings and , separated by whitespace character(s) and consisting of characters 'a' and 'b'. Two consecutive test cases are separated by whitespace character(s). The input terminates with EOF.

**Output Format**

For each test case, output the length of a longest common subsequence of and .

**Technical Specifications**

* There are at most test cases.
* and .

**Example**

|  |  |
| --- | --- |
| **Sample Input:** | **Sample Output:** |
| aaab  bbaa  aababa  abaabbaa  ababaaa  aaabba  aabbaab  bbabba  ababbbaaab  bbaaba | 2  5  4  4  5 |