Super string? Shortest?

You may heard “Longest common subsequence” in some algorithm courses or CS3391 Advanced Programming (if you didn’t , please try google it and try to solve cityu oj question 114) . You are given two strings to find their common subsequence, and it’s easy to find a $O(n^2)$ solution….

Hmm… how about we reverse this question?

Question

Let X and Y be two sub-sequences. We would like to find a super-sequence Z that contains both X and Y as sub-sequence. It’s meaningless to find a longggggggggest super-sequence, as we can add infinite characters to make this super-sequence. So, we would like to find the shortest common super-sequence in this question. Example: X=abc and Y=abb. Both abbc and abcb are the shortest common super-sequences for X and Y.

Input and Output

There is an integer N <1001 in first line, indicating the number of test cases. In each test case, there are two strings, which their length <1001.

For each test case, output the length of the shortest common super-sequence.

Example

Input :
2
abc
abb
a
a

Output:
4
1