Problem G. The Problem to Slow Down You

Description

After finishing his homework, our problem setter Federmann decided to kill time by hanging around online. He found a cool chat room that discusses competitive programming. Federmann has already joined lot of such chat rooms, but this one is special. Once he entered the chat room, he noticed that there is an announcement saying "We forbid off-topic messages!". Federmann thinks that's quite unusual, he decided to sit down and join the talk. After watching people discussing different programming challenges for a while, he found an interesting message saying "No, Federmann won't prepare another problem about strings this year."

"Oh, why do you guys think about that?" Federmann smiled. "Don't they know I have an Edward number[2] of 3?"

He then thought about something about palindrome, given two strings A and B, what is the number of their common palindrome substrings? The amount of common palindrome substrings between two strings is defined as the number of quadruple (p, q, s, t), which satisfies that:

1. $1 \leq p, q \leq length(A)$, $1 \leq s, t \leq length(B)$, $p \leq q$ and $s \leq t$. Here $length(A)$ means the length of string A.
2. $A_{p..q} = B_{s..t}$
3. $A_{p..q}$ is palindrome. (palindrome string is the string that reads the same forward or backward)

For example, $(1, 3, 1, 3)$ and $(1, 3, 3, 5)$ are both considered as a valid common palindrome substring between `aba` and `ababa`.

Federmann is excited about his new task, and he is just too lazy to write solutions, help him.

Input

The first line of the input gives the number of test cases, T. T test cases follow. For each test case, the first line contains a string A and the second line contains a string B. The length of A, B will not exceed 200000.

It is guaranteed the input file will be smaller than 8 MB.

Output

For each test case, output one line containing "Case #x: y", where x is the test case number (starting from 1) and y is the number of common palindrome substrings of A and B.

[2]The Edward number is something like Erdős number, among problem setters.

Samples

Sample Input	Sample Output
3 abacab abccab faultydogeuniversity hasnopalindromeatall abbacabbaccab youmayexpectedstrongsamplesbutnow	Case #1: 12 Case #2: 20 Case #3: 18