cpduels

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Duel Info Problems Submit Submissions

1. Prefixes and Suffixes

Rated: 2200, **Points:** 100

Time Limit Per Test	Memory Limit Per Test	Input	Output
1 second	256 megabytes	standard input	standard output

Problem Statement

You have two strings s_1 and s_2 of length n, consisting of lowercase English letters. You can perform the following operation any (possibly zero) number of times:

- Choose a positive integer $1 \leq k \leq n$.
- Swap the prefix of the string s_1 and the suffix of the string s_2 of length k.

Is it possible to make these two strings equal by doing described operations?

Input

The first line contains a single integer t ($1 \leq t \leq 10^4$) — the number of test cases. Then the test cases follow.

Each test case consists of three lines.

The first line contains a single integer n ($1 \leq n \leq 10^5$) — the length of the strings s_1 and s_2.

The second line contains the string s_1 of length n, consisting of lowercase English letters.

The third line contains the string s_2 of length n, consisting of lowercase English letters.

It is guaranteed that the sum of n for all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, print "YES" if it is possible to make the strings equal, and "NO" otherwise.

TIME LEFT

01:26:20

SCORES

Player 1	Score
davidchi	0

1	2	3	4
0	0	0	0

Player 2	Score
cherrytree1324	0

1	2	3	4
0	0	0	0

Example

Input	Output
7 3 cbc aba 5 abcaa cbabb 5 abcaa cbabz 1 a a 1 a b 6 abadaa adaaba 8 abcabdaa adabcaba	YES YES NO YES NO NO YES

Note

In the first test case:

- Initially $s_1 = \texttt{cbc}$, $s_2 = \texttt{aba}$.
- Operation with $k = 1$, after the operation $s_1 = \texttt{abc}$, $s_2 = \texttt{abc}$.

In the second test case:

- Initially $s_1 = \texttt{abcaa}$, $s_2 = \texttt{cbabb}$.
- Operation with $k = 2$, after the operation $s_1 = \texttt{bbcaa}$, $s_2 = \texttt{cbaab}$.

- Operation with $k = 3$, after the operation $s_1 =$ `aabaa`, $s_2 =$ `cbbbc`.
- Operation with $k = 1$, after the operation $s_1 =$ `cabaa`, $s_2 =$ `cbbba`.
- Operation with $k = 2$, after the operation $s_1 =$ `babaa`, $s_2 =$ `cbbca`.
- Operation with $k = 1$, after the operation $s_1 =$ `aabaa`, $s_2 =$ `cbbcb`.
- Operation with $k = 2$, after the operation $s_1 =$ `cbbaa`, $s_2 =$ `cbbaa`.

In the third test case, it's impossible to make strings equal.

Submit Your Answer

2. Ela and the Wiring Wizard	**Rated:** 2200, **Points:** 100
3. Red-Black Pepper	**Rated:** 2300, **Points:** 200
4. Balance Addicts	**Rated:** 2300, **Points:** 200