## **cpduels**

Submit **Problems Duel Info** 

Contact Tutorial Play

### TIME LEFT

Submissions

# 01:26:20

<

Rated: 2200, Points: 100

Input Memory Limit Per Test Time Limit Per Test

1. Prefixes and Suffixes

256 megabytes

Output standard input

standard output

# Problem Statement

1 second

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  $k_{\cdot}$

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

#### Input

The first line contains a single integer t ( $1 \le t \le 10^4$ ) — 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 ( $1 \le n \le 10^5$ ) — the length of the strings  $s_1$  and  $s_2$ .

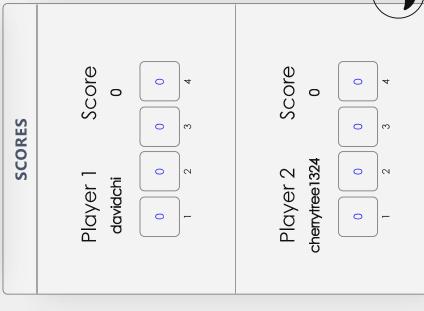
The second line contains the string  $s_1$  of length n, consisting of lowercase English letters.

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.



### Example

Input	Output
7	YES
2	YES
cbc	NO
aba	YES
5	NO
abcaa	NO NO
cbabb	YES
5	
abcaa	
cbabz	
$\vdash$	
Ф	
а	
1	
В	
þ	
9	
abadaa	
adaaba	
∞	
abcabdaa	

#### Note

adabcaba

In the first test case:

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

In the second test case:

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

**CPDuels** 10/19/22, 10:41 AM

- ullet Operation with k=3, after the operation  $s_1={
  m aabaa},\, s_2={
  m cbbbc}.$
- Operation with k=1, after the operation  $s_1={\sf cabaa}$ ,  $s_2={\sf cbbba}$ .
- Operation with k=2, after the operation  $s_1={f babaa},\,s_2={f cbbca}.$
- ullet Operation with k=1 , after the operation  $s_1={
  m aabaa}$  ,  $s_2={
  m cbbcb}$  .
- ullet Operation with k=2 , after the operation  $s_1={
  m cbbaa}$  ,  $s_2={
  m cbbaa}$  .

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

# Submit Your Answer

>	>
<b>Rated:</b> 2200, <b>Points:</b> 100 <b>~</b>	Rated: 2300, Points: 200 ~
2. Ela and the Wiring Wizard	3. Red-Black Pepper

Rated: 2300, Points: 200

4. Balance Addicts

Developed by David Chi and Jeffrey Li 2022 CPDuels.com

