Replacement

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You have a binary string* s of length n, and Iris gives you another binary string r of length $n-1$.

Iris is going to play a game with you. During the game, you will perform $n-1$ operations on s. In the i-th operation ($1 \le i \le n-1$):

- First, you choose an index k such that $1 \le k \le |s|-1$ and $s_k \neq s_{k+1}$. If it is impossible to choose such an index, you lose;
- Then, you replace $s_k s_{k+1}$ with r_i. Note that this decreases the length of s by 1.

If all the $n-1$ operations are performed successfully, you win.

Determine whether it is possible for you to win this game.

Input

Each test contains multiple test cases. The first line of the input contains a single integer t ($1 \le t \le 10^4$) — the number of test cases. The description of test cases follows.

The first line of each test case contains a single integer n ($2 \le n \le 10^5$) — the length of s.

The second line contains the binary string s of length n ($s_i =$ `0` or `1`).

The third line contains the binary string r of length $n-1$ ($r_i =$ `0` or `1`).

It is guaranteed that the sum of n over all test cases does not exceed 10^5.

Output

For each test case, print "`YES`" (without quotes) if you can win the game, and "`NO`" (without quotes) otherwise.

You can output the answer in any case (upper or lower). For example, the strings "`yEs`", "`yes`", "`Yes`", and "`YES`" will be recognized as positive responses.

*A binary string is a string where each character is either `0` or `1`.

Example

standard input	standard output
6 2 11 0 2 01 1 4 1101 001 6 111110 10000 6 010010 11010 8 10010010 0010010	NO YES YES NO YES NO

Note

In the first test case, you cannot perform the first operation. Thus, you lose the game.

In the second test case, you can choose $k = 1$ in the only operation, and after that, s becomes equal to 1. Thus, you win the game.

In the third test case, you can perform the following operations: $1\underline{10}1 \xrightarrow{r_1=0} 1\underline{01} \xrightarrow{r_2=0} \underline{10} \xrightarrow{r_3=1} 1$.