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B. Fun Game

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Vova really loves the XOR operation (denoted as \oplus). Recently, when he was going to sleep, he came up with a fun game.

At the beginning of the game, Vova chooses two binary sequences s and t of length n and gives them to Vanya. A binary sequence is a sequence consisting only of the numbers 0 and 1. Vanya can choose integers l,r such that $1 \leq l \leq r \leq n$, and for all $l \leq i \leq r$ simultaneously replace s_i with $s_i \oplus s_{i-l+1}$, where s_i is the i-th element of the sequence s.

In order for the game to be *interesting*, there must be a possibility to win. Vanya wins if, with an **unlimited** number of actions, he can obtain the sequence t from the sequence s. Determine if the game will be *interesting* for the sequences s and t.

Input

Each test consists of multiple test cases. The first line contains an integer q ($1 \le q \le 10^4$) — the number of test cases. Then follows the description of the test cases.

The first line of each test case contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the length of the sequences s and t.

The second line of each test case contains a binary sequence s of length n.

The third line of each test case contains a binary sequence t of length n.

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

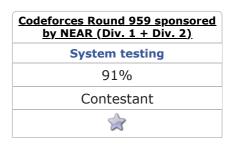
Output

For each test case, output "Yes" if the game will be *interesting*, otherwise output "No".

You can output each letter in any case (for example, the strings "yEs", "yes", "yes", and "yES" will be recognized as a positive answer).

Example

input	Сору
6	
1	
0	
1	
7	
0110100	
0110100	
9	
100101010	
101111110	
4	
0011	
1011	
4	
0100	
0001	
8	
10110111	
01100000	
output	Сору
NO	
YES	
YES	
NO	
YES	
YES	



→ Last submissions		
Submission	Time	Verdict
271225008	Jul/18/2024 18:08	Accepted
271222848	Jul/18/2024 18:04	Wrong answer on pretest 2





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Note

In the first test case, Vanya will not be able to change the sequence s with the only possible action of choosing l=r=1.

In the second test case, the sequences s and t are already equal.

In the third test case, Vanya can act as follows:

- 1. Choose l=3 and r=5, then s will become 101101010.
- 2. Choose l=5 and r=6, then s will become 101111010.
- 3. Choose l=7 and r=7, then s will become 101111110.

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