

King of String Comparison

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

You are given two strings s, t of length n . Find the number of pairs (l, r) of integers such that $1 \leq l \leq r \leq n$ and the substring $s_l s_{l+1} s_{l+2} \dots s_r$ is **lexicographically smaller** than $t_l t_{l+1} t_{l+2} \dots t_r$.

A string a is lexicographically smaller than a string b if and only if one of the following holds:

- a is a prefix of b , but $a \neq b$;
- in the first position where a and b differ, the string a has a letter that appears earlier in the alphabet than the corresponding letter in b .

Input

The first line of the input contains a single integer n ($1 \leq n \leq 200\,000$).

The second and the third lines of the input contain strings s, t of length n correspondingly, each consisting only of lowercase Latin letters.

Output

Output a single integer — the number of pairs (l, r) of integers such that $1 \leq l \leq r \leq n$ and the substring $s_l s_{l+1} s_{l+2} \dots s_r$ is **lexicographically smaller** than $t_l t_{l+1} t_{l+2} \dots t_r$.

Examples

| standard input | standard output |
|--|-----------------|
| 3 aab aba | 4 |
| 4 icpc cool | 4 |
| 4 zyzz life | 0 |
| 7 trivial problem | 16 |
| 18 goodluckandhavefun letthestrongestwin | 112 |

Note

In the first sample, there are 4 such pairs: $(1, 2), (1, 3), (2, 2), (2, 3)$.