Number of Abbreviations

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

You have a string $S = S_1S_2 \ldots S_N$ of length N consisting of lowercase English letters. Determine the number of distinct strings that can be obtained by performing the following operation exactly once:

- Choose integers l and r such that $1 \leq l \leq r \leq N$, and remove the substring from the l-th to the r-th character of S. The resulting string is $S_1S_2 \ldots S_{l-1}S_{r+1} \ldots S_N$.

Input

The input is provided in the following format from standard input:

N
S

- N is an integer.
- $1 \leq N \leq 5 \times 10^5$
- S is a string of length N consisting of lowercase English letters.

Output

Print the answer on a single line.

Examples

standard input	standard output
5 abbab	11
5 aaaaa	5
4 utpc	10

Note

In the first example, the possible resulting strings are the following 11 types:

- Empty string
- `a`
- `aab`
- `ab`
- `abab`
- `abb`

- `abba`
- `abbb`
- `b`
- `bab`
- `bbab`