Problem C. Counting Strings

Input file:	`standard input`
Output file:	`standard output`
Time limit:	6.5 seconds
Memory limit:	256 megabytes

Given a string s of length n.

We say that a string t is **mentioned** in s if and only if there exist integers l, r, satisfying $1 \le l \le r \le n$, $\gcd(l, r) = 1$ and $s[l, r] = t$.

Here, $s[l, r]$ is defined as the string that is made by concatenating $s_l, s_{l+1}, \ldots, s_r$, and $\gcd(l, r)$ represents the greatest common divisor of l and r.

You should calculate the sum of the lengths of all distinct **non-empty** strings that are mentioned in s.

Input

The first line of the input contains the integer n ($1 \le n \le 100000$).

The second line contains the string s, consisting of only lowercase English letters.

Output

Print the sum of the lengths of all distinct **non-empty** strings that are mentioned on a single line.

Example

standard input	standard output
4 abca	14