

Problem E. String Strange Sum

Input file: *standard input*
Output file: *standard output*
Time limit: 4 seconds
Memory limit: 512 mebibytes

You are given a string s consisting of lowercase English letters.

Let us consider a segment $[\ell, r]$ such that $2 \leq \ell \leq r \leq |s|$. Let us define $f(\ell, r)$ as the length of the longest suffix of substring $s[1, \ell - 1]$ such that this suffix can be divided into prefixes of substring $s[\ell, r]$. If there are no such suffixes then $f(\ell, r) = 0$.

Find the sum $\sum_{\ell=2}^{|s|} \sum_{r=\ell}^{|s|} f(\ell, r)$.

Input

The first line contains a single integer t ($1 \leq t \leq 10^5$) — the number of test cases. Description of test cases follows.

The only line for each test case contains the string s ($2 \leq |s| \leq 2 \cdot 10^5$) consisting of lowercase English letters.

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

Output

For each test case, print a single integer — the answer to the problem.

Example

standard input	standard output
8	1
aa	0
ab	6
ababa	7
abaaba	0
abacaba	74
abaaababaab	51
aababcabcabc	20
abcdabcabaabcd	

Note

Let us consider the third test case. In this case, $f(2, 2) = 0$, $f(2, 3) = 0$, $f(2, 4) = 0$, $f(2, 5) = 0$, $f(3, 3) = 0$, $f(3, 4) = 2$, $f(3, 5) = 2$, $f(4, 4) = 0$, $f(4, 5) = 2$, $f(5, 5) = 0$. So the answer is 6.