Problem H. String and GCD

Time limit: 16 seconds
Memory limit: 256 Megabytes

There is a string of length n which only contains lowercase letters.
$S[l:r]$ represents the string concatenated from the l -th character to the r -th character.
B is a boolean expression,the Iverson brackets

$$[B] = \begin{cases} 1, if\ B\ is\ true \\ \\ 0, otherwise \end{cases}$$

$\gcd(i,j)$ is the greatest common divisor of i and j.
We define $f(i) = \sum_{j=1}^{i-1} [S[1:j] == S[i-j+1:i]] \times \gcd(i,j)$.
Now ask for the value of $\prod_{i=1}^{n} (f(i)+1)$ modulo 998 244 353.

Input

The first line of input is a positive integer $T(T \leq 10)$ representing the number of test cases.
For each case,input a string S of lowercase letters, no longer than 10^6.

Output

For each case, output a line with a positive integer representing the answer.

Example

standard input	standard output
5 aaaaa aabaab abcdefghi abaabaaba abbabbabb	150 48 1 3840 1344