Problem A. String

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

There is a string of length n, $S[l..r]$ represents the string concatenated from the lth character to the rth character, and S_{len} is the length of the string($S[1..S_{len}]$ represents the whole S string).

We define F_G as the number of positive integers x that satisfy the following conditions:

1. $1 \leq x \leq G_{len}$

2. $G[1, x] = G[G_{len} - x + 1, G_{len}]$

3. The length of the common part of the intervals $[1, x]$ and $[G_{len} - x + 1, G_{len}]$ is greater than 0 and is divisible by k.

Now ask for the value of $\prod_{i=1}^{n}(F_{S[1..i]} + 1)$ modulo 998244353.

Input

The first line of input is a positive integer $T(T \leq 10)$ representing the number of data cases.

For each cases:

first line input a string S of lowercase letters, no longer than 10^6.

second line input a positive integer $k(1 \leq k \leq S_{len})$.

Output

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

Example

standard input	standard output
1 abababac 2	24

Note

Note that the stack space of the judge system is a bit small, please pay attention to the reasonable allocation of memory.