Q String root

String = "mem mem mem mem"

the no. of times the smaller packet is repeated to form the entire string

ans → 4

length of packet = x

mem mem mem mem

Length of string = 4x

x x x

x x x

LPS → 3x

LPS = string - length / string length - LPS

$= \frac{4x}{4x - 3x} = \frac{4x}{x} = 4$

LPS →

m	e	m	m	e	m	m	e	m	e	m
0	0	1	1	2	3	1	2	6	1	2	9

$\frac{12}{12 - 9} = \frac{12}{3} = 4$

$\frac{3 \times 4}{3 \times 4 - 3 \times 3} = \frac{4}{1} = 4$

=

Q Diane Codeforces

3 + 2 + 3 n = 10

[a a a a a b a a a a]

2 + 1

→ n char
→ lowercase
→ all substrings must be odd no. of times

n

even odd

even + odd → odd

odd + even → odd

4 aaaa — 2

+ 1

3

n = 11

[a a a a a be a a a a]

n

n → even

10 / 2 = x

aaaaa b

x/2 x/2 - 1

x — odd

bc

x/2 x/2 - 2

Q Given a string, longest prefix suffix. (proper prefix)

SC → O(1)

abc x abc

ans → 3

Rolling Hash

a b x y a b s[n-1-i]

p = 31

ph = (pph * p + (s[i] - 'a' + 1)) b - a + 1 / b + 1 - 2

sh = (psh + (s[n-1-i] - 'a' + 1) * pow

i = 1

ab x y ab

0 1 2 3 4 5

ph = 1 ph = (1 * 31 + 2) = 33

sh = 2 sh = (2 + (1 * 31) = 33