Q String → "memmemmemmem"

the no. of times, the smallest packet is repeated to form the string.

ans → 4

length of packet = x

mem memmem mem

x x x

x x x

length of string = 4x

LPS → 3x

$= \frac{\text{string. length}}{\text{string. length} - \text{LPS}}$

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

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

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

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

Q Diane codeforces

n = 10

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

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

n → even / odd

n even

a a a a a a a

even + odd = odd

odd + even = odd

n = 11

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

x → Length (even)

→ x/2 b x/2 - 1

x → odd

b c

x/2 x/2 - 2

Q Given a string, longest prefix suffix.

i

SC → O(1)

→ n-1-i

a b c x a b c

ans → 3

a → 1
b → 2
c → 3

Rolling Hash

ph = (pph x p + (s[i] - 'a' + 1)

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

abc → $a^3 \times p^4 + b \times p^2 - \ldots$

a b x y a b

ph = 0 1

sh = 0 2

ph = (0 * 31 + 1) = 1

sh = (0 + (2 * 1)) = 2

ph = 1

sh = 2

ph = 1 * 31 + 2 = 33

sh = 2 + (1 * 31) = 33

Any doubts ??