$$f(n) = L(n-1) + (n-2) \times L(n-2) + [\frac{(n-1)(n-2)}{2} - 1] \times L(n-3)$$
$$+ \sum_{k=3}^{n-2} \frac{(n+k-3)!}{k!} \times [(n-1)(n-2) - k(k-1)] \times L(n-k-1)$$

(Remark : L(0) don't is not used)

we can compute $F_k = [(n-1)(n-2)-k(k-1)]$ by an addition with $F_k = F_{k-1} - 2(k-1)$

and $\frac{1}{k!}$ recursively by $\frac{1}{k!} = k \times \frac{1}{(k+1)!}$ *; only one inversion for* $\frac{1}{n!}$

So we have 6 multiplications modulus(1 000 000 007) by coefficient:

- one for $\frac{1}{n!}$
- one for $\frac{1}{k!}$
- one for $(n+k-3)!$
- three for the product$(n+k-3)! \times \frac{1}{k!} \times F_k \times L(n-k-1)$