

`seq(nops(LT(i, z)), i=2..7)`

= 0, 1, 4, 19, 112, 771.

It's A127548 in OEIS.

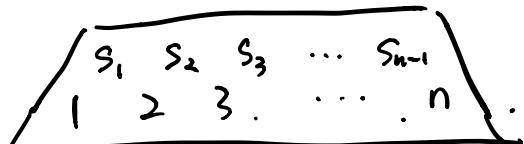
Here is a proof:

In the OEIS, $A127548(n) = A000271(n) + A000271(n-1)$

$A000271$ is the permanent of the $(0, 1)$ -matrix having (i, j) -th entry equal to 0 iff this is on the diagonal or the first upper diagonal.

Equivalently, number of permutations p of $\{1, 2, \dots, n\}$ such that $p(i) - i$ not in $\{0, 1\}$.

Consider a reduced n by 2 Latin trapezoid.

 then $s_i - i \notin \{0, 1\}$.

Let $\{s_n\} = \{1, 2, \dots, n\} \setminus \{s_1, s_2, \dots, s_{n-1}\}$.

① If $s_n = n$, then $(s_1, s_2, \dots, s_{n-1})$ is a permutation p of $\{1, 2, \dots, n-1\}$ such that $p(i) - i$ not in $\{0, 1\}$

③ If $s_n \neq n$, then (s_1, s_2, \dots, s_n) is a permutation p of $\{1, 2, \dots, n\}$ such that $p(i) - i$ not in $\{0, 1\}$.

It's obvious this is an one-to-one map, so the number of reduced n by 2 Latin trapezoid is equal to $A_{000271}(n) + A_{000271}(n-1)$, which is $A_{127548}(n)$.