$$\Rightarrow \bar{n}'_{123,4} = (2x_1+1)(2x_2+1)(2x_3+1)(2x_4+1)\,z_{123,4}$$
$$+ (2x_1+1)(2x_2+1)(2x_3+1)$$
$$\cdot \Big\{ -\Delta_4 - (2x_1+1)(2x_2+1)\big\{-\Delta_3 - (2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\big\}x_3$$
$$+ \Delta x_{12,3}\big\{-(2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\big\}\Big\}$$
$$\cdot\, x_4$$
$$- \Delta x_{123,4} \cdot \Big\{ -(2x_1+1)(2x_2+1)\big\{-\Delta_3 - (2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\big\}x_3$$
$$+ \Delta x_{12,3}\big\{-(2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\big\}\Big\}$$

... and so on.

<u>Let's try to bring this in a more general solution....</u>

We want a general ~~sol~~ form of $\bar{n}'_{123\ldots,n}$, $n \geq 2$, $n \in \mathbb{N}$

for the intersection of n-equations.

<u>Part 1</u>:

That's easy:

(1) $\boxed{\text{We have } \bar{n}'_{123,\ldots,n} = \prod_{k=1}^{n} (2x_k+1)\, z_{12\ldots n-1,n} + \mathcal{A}}$

<u>Part 2</u>: $\mathcal{A}$? That's much harder.

(2) <u>S1S:</u> $(\bar{n}'_{1,2})$ $(n=2)$

$$\mathcal{A}_{(2)} = (2x_1+1)(-\Delta_2+\Delta_1)x_2 - \Delta x_{1,2}\Delta_1$$
$$= \prod_{e_1=1}^{n-1}(2x_{e_1}+1)\cdot\{-\Delta_n+\Delta_{n-1}\}\,x_n - \Delta x_{12\ldots n-1,n}\cdot\Delta_{n-1}$$

<u>S2S</u> $(\bar{n}'_{12,3})$ $(n=3)$

$$\mathcal{A}_{(3)} = \prod_{e_1=1}^{n-1}(2x_{e_1}+1)\Big\{-\Delta_n - \prod_{e_2=1}^{n-2}(2x_{e_2}+1)(-\Delta_{n-1}+\Delta_{n-2})\,x_{n-1}$$
$$+ \Delta x_{1\ldots n-2,n-1}\Delta_{n-2}\Big\}\,x_n$$
$$- \Delta x_{1\ldots n-1,n}\Big\{-\prod_{e_3=1}^{n-2}(2x_{e_3}+1)(-\Delta_{n-1}+\Delta_{n-2})\,x_{n-1}$$
$$+ \Delta x_{1\ldots n-2,n-1}\Delta_{n-2}$$