IV

Notation Info !

From now on, we will do a small notation changing.

Until now, we have had: $x_2 > x_1 \Leftrightarrow x_1 < x_2$

Since now, we will have: $x_2 < x_1 \Leftrightarrow x_1 > x_2$

Or, more general: $x_i > x_j$, with $i<j$, $i,j \in \mathbb{N}: i \neq j$

We will see, that this will lead to less confusion because of notation, in the next steps.

$\Rightarrow$ <u>Now, we will do the intersection of several equations.</u>

Given be: $\bar{n}_i' = (2x_i+1)y_i' - \Delta x_{ij}\Delta_i$

Let's start!

$\Rightarrow$ **Step 1:**

$$\bar{n}_1' = (2x_1+1)y_1' - \Delta x_{1,2}\Delta_1 \qquad \Delta_1 \in \{1,\dots,2x_1\}$$
$$\bar{n}_2' = (2x_2+1)y_2' - \Delta x_{1,2}\Delta_2 \qquad \Delta_2 \in \{1,\dots,2x_2\}$$

$$(S1S) \Rightarrow \boxed{\bar{n}_{1,2}' = (2x_1+1)(2x_2+1)z_{1,2} + \underbrace{(2x_1+1)(-\Delta_2+\Delta_1)x_2 - \Delta x_{1,2}\Delta_1}_{=:\Delta_{12}}}$$

$\Rightarrow$ **Step 2:**

$$\Rightarrow \bar{n}_{1,2}' = (2x_1+1)(2x_2+1)z_{1,2} + \Delta x_{12,3}\{\underbrace{(2x_1+1)(-\Delta_2+\Delta_1)x_2 - \Delta x_{1,2}\Delta_1}_{=-\Delta_{12}}\}$$

$$\bar{n}_3' = (2x_3+1)y_3' - \Delta x_{12,3}\Delta_3 \qquad \Delta_3 \in \{1,\dots,2x_3\}$$

$$(S2S) \Rightarrow \boxed{\begin{aligned}\bar{n}_{12,3}' = {} & (2x_1+1)(2x_2+1)(2x_3+1)z_{12,3} \\ & \underbrace{+ (2x_1+1)(2x_2+1)\{-\Delta_3 - (2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\}x_3 - \Delta x_{12,3}\{(2x_1+1)(-\Delta_2+\Delta_1)x_2 + \Delta x_{1,2}\Delta_1\}}_{=:-\Delta_{123}}\end{aligned}}$$

$\Rightarrow$ **Step 3:**

$$\bar{n}_{12,3}' = (2x_1+1)(2x_2+1)(2x_3+1)z_{12,3} + \Delta x_{123,4}\cdot(-\Delta_{123})$$

$$\bar{n}_4' = (2x_4+1)y_4' - \Delta x_{123,4}\Delta_4 \qquad \Delta_4 \in \{1,\dots,2x_4\}$$