

**Decimal number system , even though we measure time using a 12-number system:**

**Let:**

$$[1]0 = 12 \text{ (in decimal system)}$$

$$[\frac{1}{2}]0 = 6 \text{ (in decimal system)}$$

$$[\frac{1}{2}]1 = 7 \text{ (in decimal system)}$$

**Then:**

$$N = \left[ \{1, 2, 3, 4, 5\} \cup \left[ \bigcup_{n \in \mathbb{N}} \left( \left[ \frac{1}{2} \right] 0 \right) n \right] \cup \left[ \bigcup_{n \in \mathbb{N}} \left( \left[ \frac{1}{2} \right] 0 \right) n + 3 \right] \cup \left[ \bigcup_{n \in \mathbb{N}} \left( \left[ \frac{1}{2} \right] 0 \right) n \pm \{1, 2\} \right] \right]$$

$$\left[ \left( \left[ \frac{1}{2} \right] 0 \right) n \right] - \text{numbers divisible by 2 and by 3}$$

$$\left[ \left( \left[ \frac{1}{2} \right] 0 \right) n; \left( \left[ \frac{1}{2} \right] 0 \right) n \pm \{2\} \right] - \text{numbers divisible by 2}$$

$$\left( \left( \left[ \frac{1}{2} \right] 0 \right) n + \{3\} \right) - \text{numbers divisible by 3 and at the same time don't divisible by 2}$$

$$\left( \left( \left[ \frac{1}{2} \right] 0 \right) n \pm \{1\} \right) - \text{numbers don't divisible by 2 or 3}$$

$$\left( \left( \left[ \frac{5}{2} \right] 0 \right) n \pm \{5\} \right) - \text{numbers divisible by 5 and at the same time don't divisible by 2 or 3}$$

$$\left( \left( \left[ \frac{7}{2} \right] 0 \right) n \pm \left\{ \left[ \frac{1}{2} \right] 1 \right\} \right) - \text{numbers divisible by 7 and at the same time don't divisible by 2 or 3}$$

$$\begin{aligned}
& (P_{\{1\}\setminus\{2,3,5,7\}} \times P_{\{1\}\setminus\{2,3,5,7\}})^N \cup \{5, 7\} = \\
& = \{1\} \cup \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 5 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 5 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 7 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{1} \right]
\end{aligned}$$

Then:

$$\begin{aligned}
& (P_{\{1\}\setminus\{2,3,5,7\}} \times P_{\{1\}\setminus\{2,3,5,7\}})^1 \cup \{5, 7\} = \\
& = \{1\} \cup \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 5 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 5 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 7 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{1} \right]
\end{aligned}$$

And:

$$\begin{aligned}
& P_{\setminus\{2,3\}} \cup (P_{\setminus\{2,3,5,7\}} \times P_{\setminus\{2,3,5,7\}})^1 \cup \{1\} = \\
& = \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 5 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 5 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 7 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{1} \right]
\end{aligned}$$

Then:

$$\begin{aligned}
& P_{\setminus\{2,3\}} = \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \setminus \\
& \setminus \left[ \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \times \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 1 \right] \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 5 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm 5 \right] \setminus \left[ \bigcup_{n \in \mathbb{N}} \left( \begin{bmatrix} 7 \\ 2 \end{bmatrix} \mathbf{0} \right) n \pm \begin{bmatrix} 1 \\ 2 \end{bmatrix} \mathbf{1} \right]
\end{aligned}$$