

$$3. \quad p = \quad x_n = \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad \dots$$

$$\begin{array}{c}
 x_{n-1} \\
 0 \\
 1 \\
 2 \\
 3 \\
 4 \\
 5 \\
 \vdots
 \end{array}
 \left[\begin{array}{cccccc}
 \alpha_0 & \alpha_1 & \alpha_2 & \alpha_3 & \alpha_4 & \dots \\
 \alpha_0 & \alpha_1 & \alpha_2 & \alpha_3 & \alpha_4 & \dots \\
 0 & \alpha_0 & \alpha_1 & \alpha_2 & \alpha_3 & \dots \\
 0 & 0 & \alpha_0 & \alpha_1 & \alpha_2 & \dots \\
 0 & 0 & 0 & \alpha_0 & \alpha_1 & \dots \\
 \vdots & \vdots & \vdots & 0 & \alpha_0 & \dots \\
 & & & \vdots & 0 & \dots
 \end{array} \right]$$

Then we have the following:

- If $i=0$ or $i=1$, $p_{ij} = \alpha_j$, $j=0,1,2,\dots$
- If $i \geq j+2$, $p_{ij} = 0 \quad \forall i,j \in \{0,1,2,\dots\}$
- If $0 \leq i-2 < j$, $p_{ij} = \alpha_{j-1} \quad \forall i,j \in \{0,1,2,\dots\}$