


$$S[n] \rightarrow \boxed{} \rightarrow x[n]$$

$$x[n] = \sum_{k=0}^q a_k s[n-k]$$

$$x[n] = \underset{\uparrow}{a_0} s[n] + \underset{\uparrow}{a_1} s[n-1] + \underset{\uparrow}{a_2} s[n-2] + \dots + \underset{\uparrow}{a_q} s[n-q]$$

$$w \ a_k \quad k \in \{0, 1, 2, \dots, q\}$$

$$s_1[n] = \{1, 2, 3, 4, 5, 6, 7, 8\} \quad 1 \times 8$$

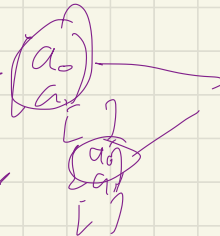
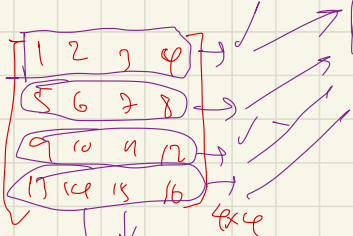
$$s_2[n] = \{9, 10, 11, 12, 13, 14, 15, 16\} \quad 1 \times 8$$

$$\hat{s}[n] = \hat{a}_0 + \hat{a}_1 n$$

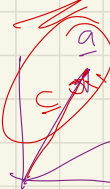
$$\hat{x} = \begin{bmatrix} a_0 \\ a_1 \end{bmatrix}_{2 \times 1}$$

$$64 \times 64$$

$$\begin{bmatrix} a_0 \\ a_1 \\ a_i \\ a_j \\ 0 \\ 0 \end{bmatrix}_{6 \times 1}$$



$$|a-b|$$



$$|a-b| < |b-a|$$

$$\frac{a}{c} = \frac{b}{c} \Leftrightarrow a = b$$

$$\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} a \\ b \end{bmatrix} \Leftrightarrow x_1 = a \text{ and } x_2 = b$$

$$|a-b| \geq 0$$