

$$x(n) = \{ \underset{\uparrow}{1}, 2, 3, 4, 5 \} \quad h(n) = \{ \underset{\uparrow}{6}, 7, 8 \}$$

For linear using circular, first we make the lengths equal. to

$$x(n) = \{ \underset{\uparrow}{1}, 2, 3, 4, 5, 0, 0 \} \text{ length of linear conv.}$$

$$h(n) = \{ \underset{\uparrow}{6}, 7, 8, 0, 0, 0, 0 \} \quad 5+3-1 = \underline{\underline{7}}$$

$$\begin{bmatrix} 1 & 0 & 0 & 5 & 4 & 3 & 2 \\ 2 & 1 & 0 & 0 & 5 & 4 & 3 \\ 3 & 2 & 1 & 0 & 0 & 5 & 4 \\ 4 & 3 & 2 & 1 & 0 & 0 & 5 \\ 5 & 4 & 3 & 2 & 1 & 0 & 0 \\ 0 & 5 & 4 & 3 & 2 & 1 & 0 \\ 0 & 0 & 5 & 4 & 3 & 2 & 1 \end{bmatrix} \begin{bmatrix} 6 \\ 7 \\ 8 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix} = \begin{bmatrix} 6 \\ 19 \\ 40 \\ 61 \\ 82 \\ 67 \\ 40 \end{bmatrix}$$