

$$x = [2 \ 1 \ 2 \ 1]$$

$$h = [1 \ 2 \ 3 \ 0]$$

$$\begin{bmatrix} y(0) \\ y(1) \\ y(2) \\ y(3) \end{bmatrix} = \begin{bmatrix} 1 & 0 & 3 & 2 \\ 2 & 1 & 0 & 3 \\ 3 & 2 & 1 & 0 \\ 0 & 3 & 2 & 1 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \\ 2 \\ 1 \end{bmatrix}$$

$$= \begin{bmatrix} 2+0+6+2 \\ 4+1+0+3 \\ 6+2+2+0 \\ 0+3+4+1 \end{bmatrix}$$

$$= \begin{bmatrix} 10 \\ 8 \\ 10 \\ 8 \end{bmatrix}$$

$$\begin{array}{l} y(0) \\ y(1) \\ y(2) \\ y(3) \\ y(4) \\ y(5) \end{array} = \begin{bmatrix} 1 & 0 & 0 & 0 & 3 & 2 \\ 2 & 1 & 0 & 0 & 0 & 3 \\ 3 & 2 & 1 & 0 & 0 & 0 \\ 0 & 3 & 2 & 1 & 0 & 0 \\ 0 & 0 & 3 & 2 & 1 & 0 \\ 0 & 0 & 0 & 3 & 2 & 1 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \\ 2 \\ 1 \\ 0 \\ 0 \end{bmatrix}$$

$$= [2, 5, 10, 8, 8, 3]$$