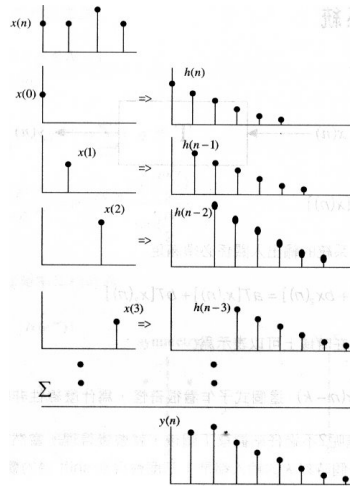
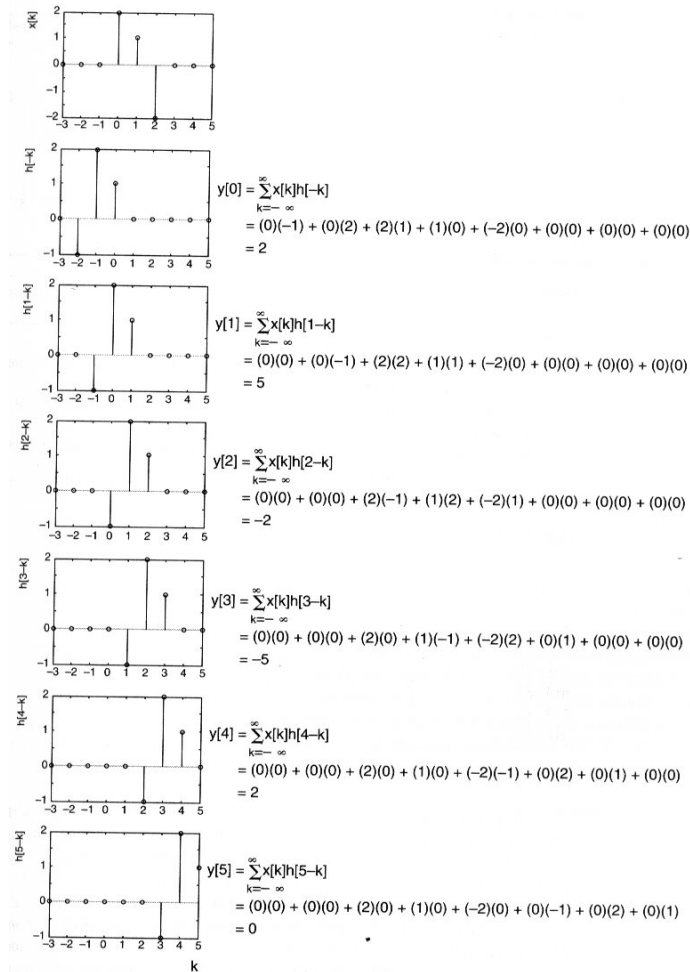


Method 1:



Method 2: For a LTI sys., $h[n]=[1 \ 2 \ -1]$ (Impulse Response) and $x[n]=[2 \ 1 \ -2]$ (Input)



【 “Fundamentals of Digital Signal Processing,” Joyce Van de Vegte , Prentice Hall, 2002. pp. 149 】

Tabular Digital Convolution

| | | | | | | | | | |
|-----------|----|----|----|----|----|----|---|-------------|------------|
| $x[k]:$ | | | 2 | 1 | -2 | | | | |
| $h[-k]:$ | -1 | 2 | 1 | | | | | $y[0] = 2$ | |
| $h[1-k]:$ | | -1 | 2 | 1 | | | | $y[1] = 5$ | |
| $h[2-k]:$ | | | -1 | 2 | 1 | | | $y[2] = -2$ | |
| $h[3-k]:$ | | | | -1 | 2 | 1 | | $y[3] = -5$ | |
| $h[4-k]:$ | | | | | -1 | 2 | 1 | $y[4] = 2$ | |
| $h[5-k]:$ | | | | | | -1 | 2 | 1 | $y[5] = 0$ |