

EE424 DSP Homework-3 (MATLAB)

(1) Use MATLAB to determine and plot the convolution  $y[n] = x[n] * h[n]$  of the following sequences: (pb215)

(a)  $x[n] = [2, -4, 5, \underline{3}, -1, -2, 6]$ ,  $h[n] = [1, \underline{-1}, 1, -1, 1]$

(b)  $x[n] = [1, 1, \underline{0}, 1, 1]$ ,  $h[n] = [1, -2, -3, \underline{4}]$

(2) Let  $x[n] = 0.8^n \cdot u[n]$ ,  $h[n] = (-0.9)^n \cdot u[n]$ , and  $y[n] = h[n] * x[n]$ . Truncate  $x[n]$  and  $h[n]$  to 26 samples. Use *conv* function to compute  $y[n]$ . Plot  $y[n]$  using the *stem* function. (pb216)