Fourier Transform Properties and DFT Pairs

1. Find the 8 points DFT frequency response of the systems having the following impulse responses:
    a. $h_1[n]=[1,0,1,2,3,-1]$
    b. $h_2[n]=[-1,0,0,0,1]$
    c. $h_3[n]=[0,1,2,3,3,2,1]$
    d. $h_4[n]=[0,0,1,1,1,1]$

2. Using the DFTs found in the previous problem find the DFT corresponding the following systems:
    a. $h_5[n]=0.5h_1[n]$
    b. $h_6[n]=0.5h_1[n]-0.25\ h_2[n+1]$
    c. $h_7[n]= h_3[-n]+0.8\ h_4[n-1]$
    d. $h_8[n]= h_3[2-n]$