EE424 Homework 5

1) Let $h[n] = \delta[n+1] + \delta[n-1]$, $x[n] = \delta[n] + 2\delta[n-1]$. Compute the following convolutions:

   (1) $y_1[n] = x[n] * h[n]$
   (2) $y_2[n] = x[n+2] * h[n]$
   (3) $y_3[n] = x[n] * h[n+2]$

2) Determine the output of an LTI system if the impulse response h[n] and the input are as follows:

   (1) $h[n] = a^n u[-n]$, $x[n] = u[n]$ with $a > 1$
   (2) $h[n] = 2^n u[-n]$, $x[n] = u[n-3]$