Solving Difference Equations:

1. Solve the following difference equations using recursion first by hand (for n=0 to n=4), then using MATLAB (for n=0 to n=30). Plot the output computed by MATLAB on a stem plot.

a) \( y[n] + 0.5y[n-1] = 2x[n-1] \); \( x[n] = \delta[n] \), \( y[-1] = 0 \)
b) \( y[n] + 2y[n-1] = 2x[n-1] \); \( x[n] = \delta[n] \), \( y[-1] = 0 \)
c) \( y[n] + 1.2y[n-1] + 0.32y[n-2] = x[n]-x[n-1] \); \( x[n] = u[n] \), \( y[-2] = 1 \), \( y[-1]=2 \)