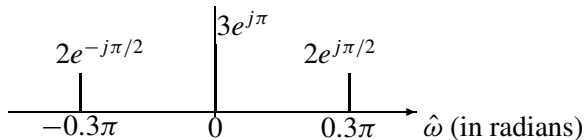## PROBLEM:

A discrete-time signal $x[n]$ has the two-sided spectrum representation shown below.

(a) Write an equation for $x[n]$. Make sure to express $x[n]$ as a real-valued signal.

(b) Use the MATLAB GUI called ltidemo.m to determine the output $y[n]$ when the FIR filter is a 9-point averaging filter. Include a screen shot of the result from ltidemo.

(c) Determine the formula for the output signal $y[n]$. Do this calculation by hand.