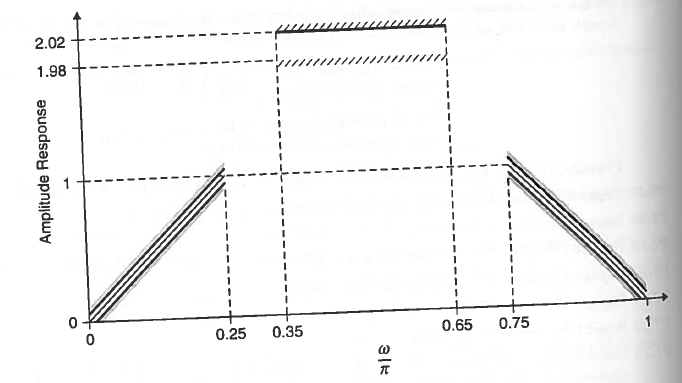
1. Consider an ideal low pass filter with the cutoff frequency. We want to approximate this filter using a frequency-sampling design in which we choose 40 samples.
2. Choose the sample at, and use the naïve design method to compute h(n). Determine the minimum stopband attenuation.
3. Now vary the sample at, and determine the optimum value to obtain the largest minimum stopband attenuation.
4. Plot the magnitude responses in dB of the preceding two designs in one plot; comment on the results.
5. Design a minimum-order linear phase FIR filter, using the Parks-McClellan algorithm, to satisfy the requirements given below.



1. Provide a plot of the amplitude response with grid lines and axis labeling as show in the above figure
2. Generate the following signals:

Process these signals through this filter to obtain the corresponding output signals Provide stem plots for all input and output signals in one figure.