#1 Plot the transfer function

We will learn FIR filter.

Consider the following difference equation.

$$y[n]=12\,x[n] - 7\,x[n-1] + x[n-2]$$

The transfer function is

$$H(z) \;=\; 12 - 7z^{-1} + z^{-2} \;=\; (3 - z^{-1})(4 - z^{-1}) \;=\; 12\,\frac{\left(z-\frac{1}{3}\right)\left(z-\frac{1}{4}\right)}{z^2}$$

Plot the the transfer function by Matlab / Octave.

#2 What is SNR (Signal to Noise) Ration

#3 Find the usage awgn in Matlab / Octave (Additive White Gaussian Noise)
   Plot a sin wave with noise (adjust the snr input to the awgn function).
   Plot the pure noise component.
   Plot the histogram of the noise component.