Tune-Up Tuesday for October 17, 2017

The MATLAB command freqz(**h**) plots the magnitude and phase of the frequency response for an LTI system with impulse response **h** = [ h[0] h[1] … h[M] ].

The magnitude response will be in deciBels: *A*dB = 20 log10 *A*.

Use freqz(**h**)to determine the

1. frequency selectivity (lowpass, highpass, or allpass)
2. phase response (linear or non-linear)

(a) Ideal delay by 3 samples.

(b) Five-point averaging filter

(c) First-order difference filter *h*[*n*] = **[*n*] − **[*n*-1] where **[n] is the unit impulse.

(d) *h*[*n*] = **[*n*] + 2 **[*n*-1] + **[*n*-2] where **[n] is the unit impulse. (Homework 5.1)

Give the MATLAB code used for each part. Using MATLAB comments, give answers to each part above. You do not have to submit any plots.