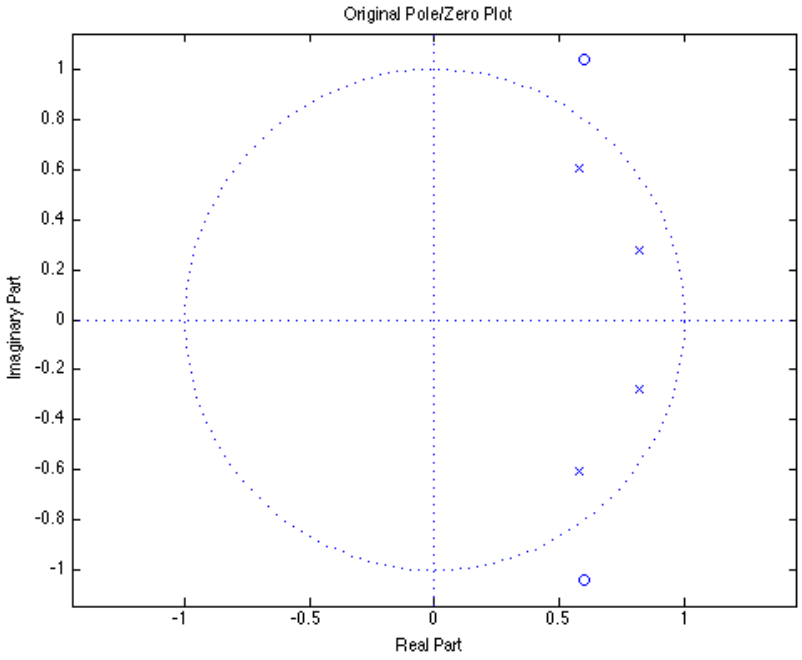
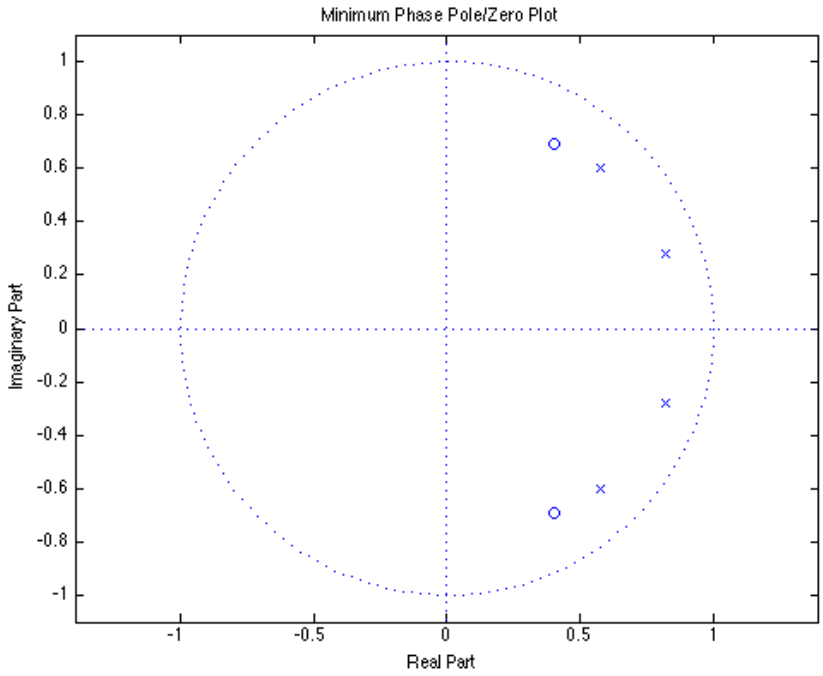
EEN 540 – Homework 2

Connor McCullough

Part A

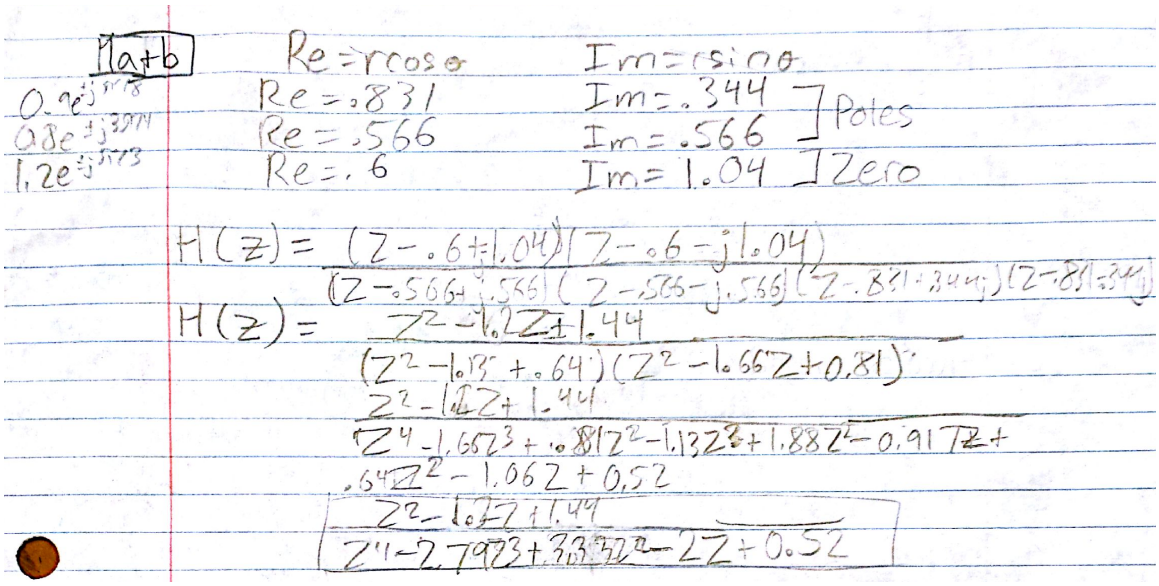
Pole-Zero plots for original non-minimum phase filter (top) and minimum phase (bottom).



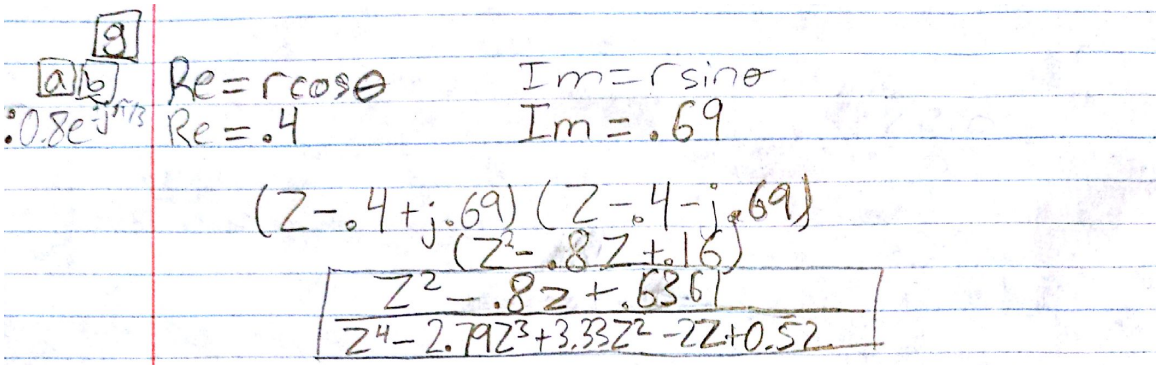


Part B

Non-Minimum Phase Transfer Function:

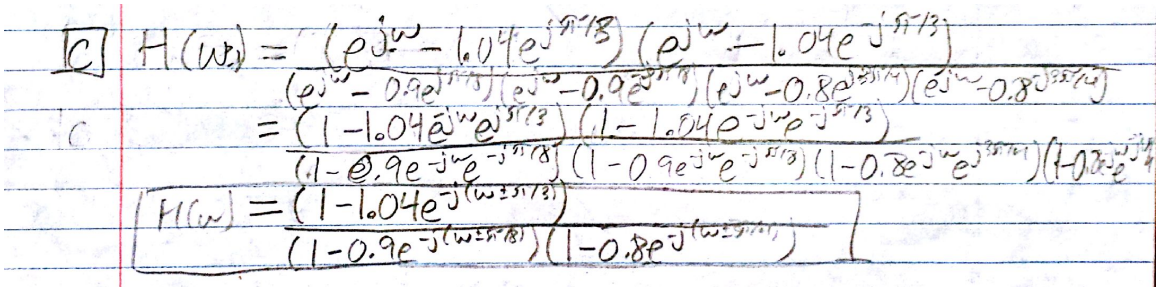


Minimum Phase Transfer Function:



Part C

Non-minimum Phase Fourier Transform:

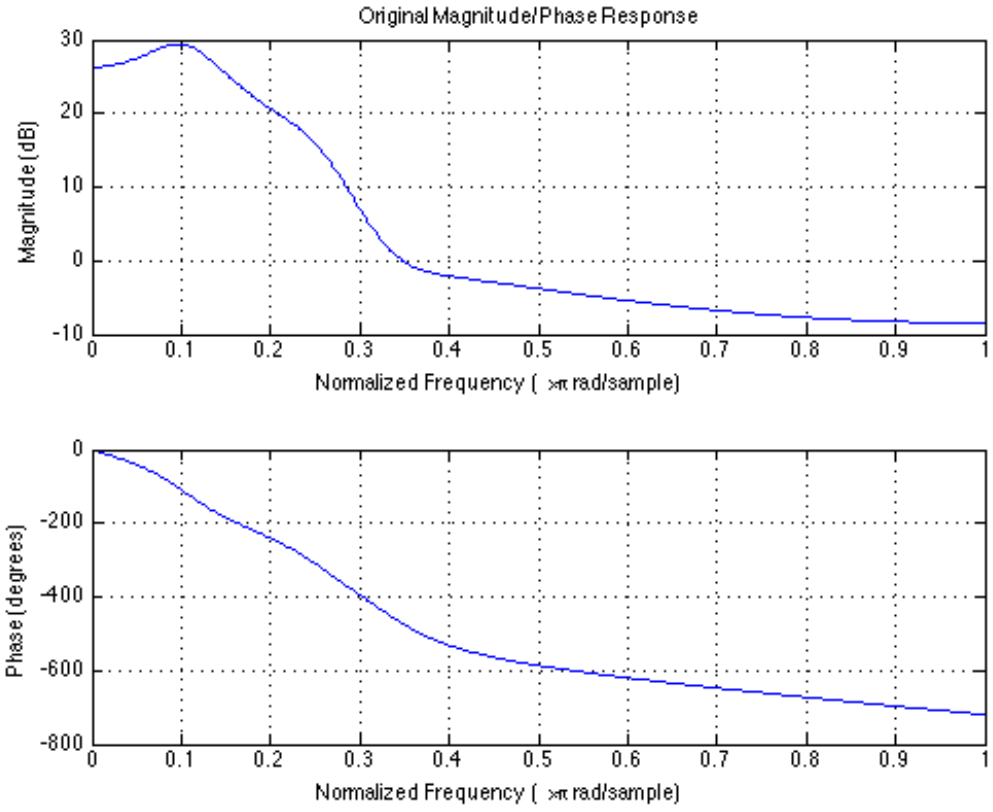


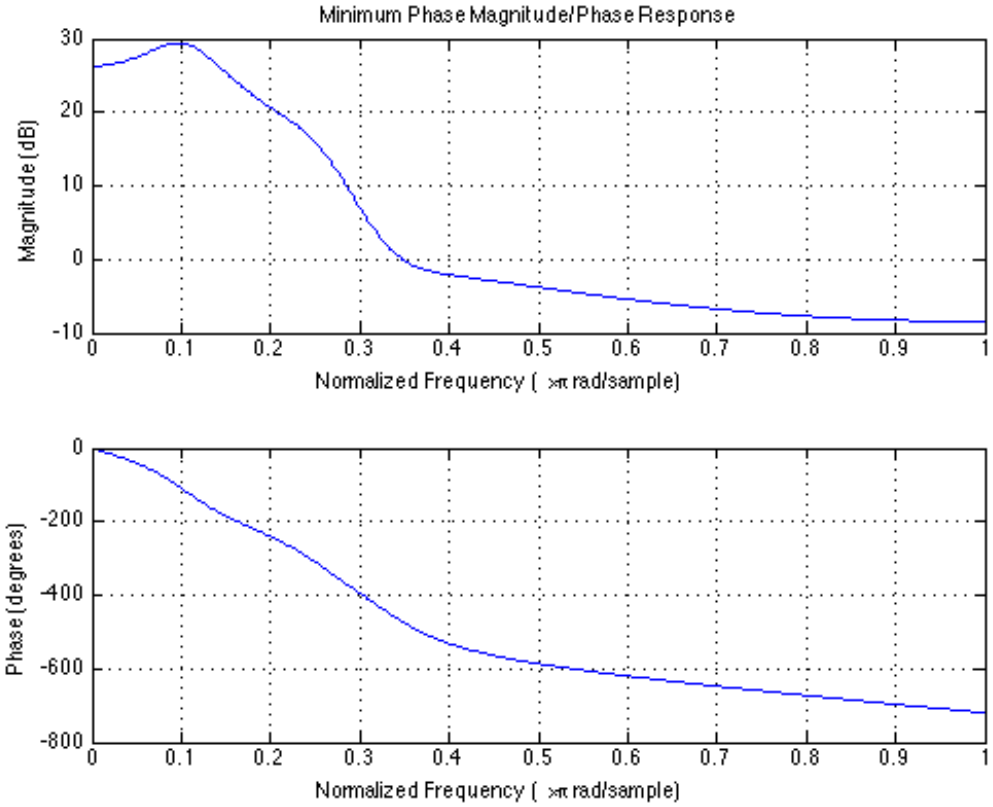
Minimum Phase Transfer Function:

$$[C]\quad H(\omega) = \frac{1 - 0.8e^{-j(\omega \pm \pi/3)}}{(1 - 0.9e^{-j(\omega \pm \pi/8)})(1 - 0.8e^{j(\omega \pm \pi/4)})}$$

Part D

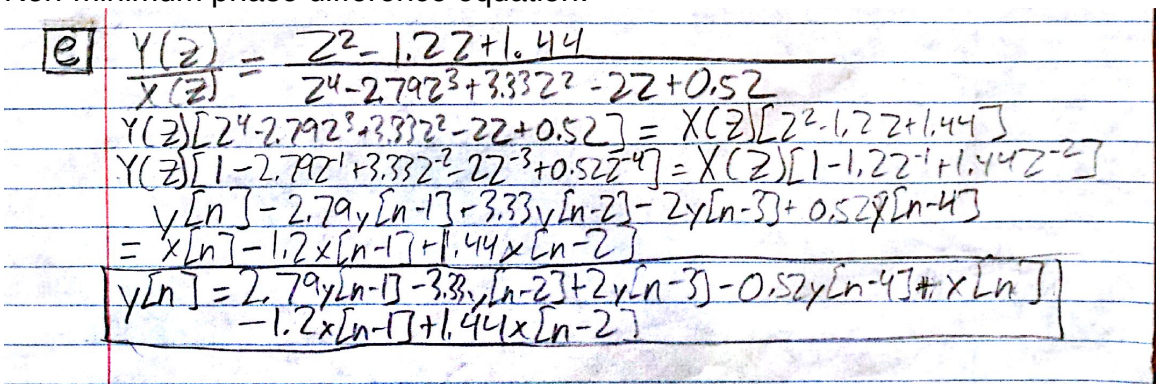
Magnitude and Phase Response of non-minimum phase filter (top) and minimum phase filter (bottom).



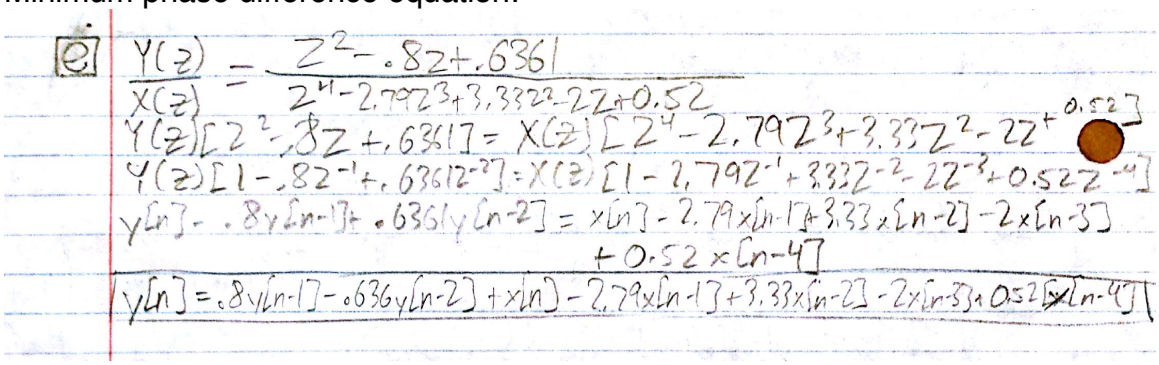


Part E

Non-minimum phase difference equation:

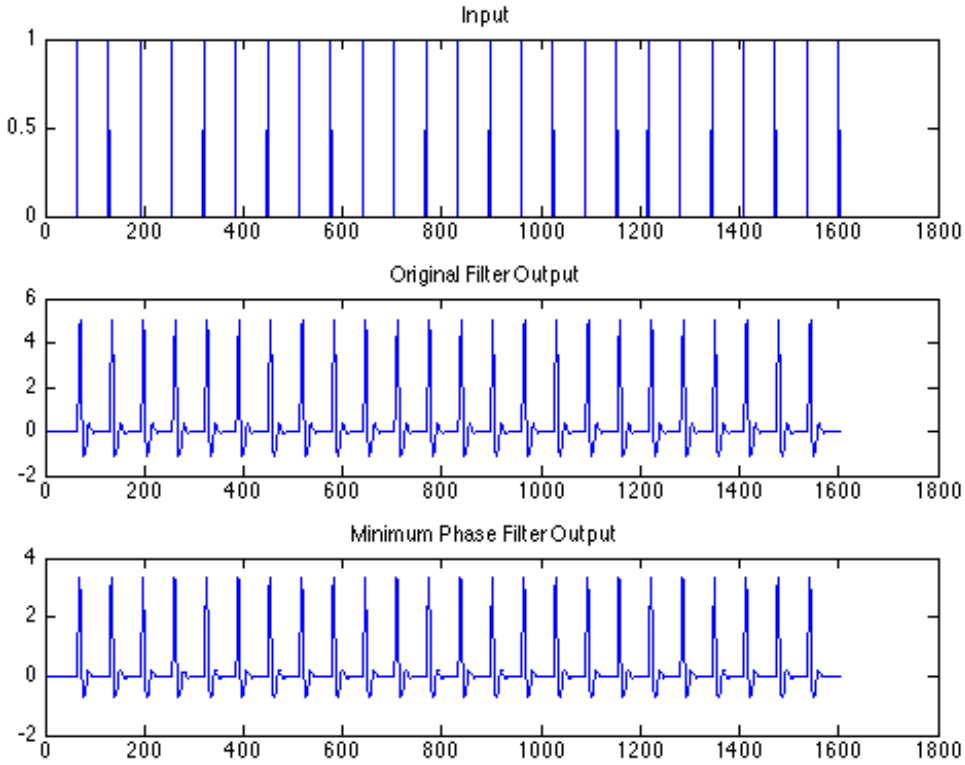


Minimum phase difference equation:



Part F

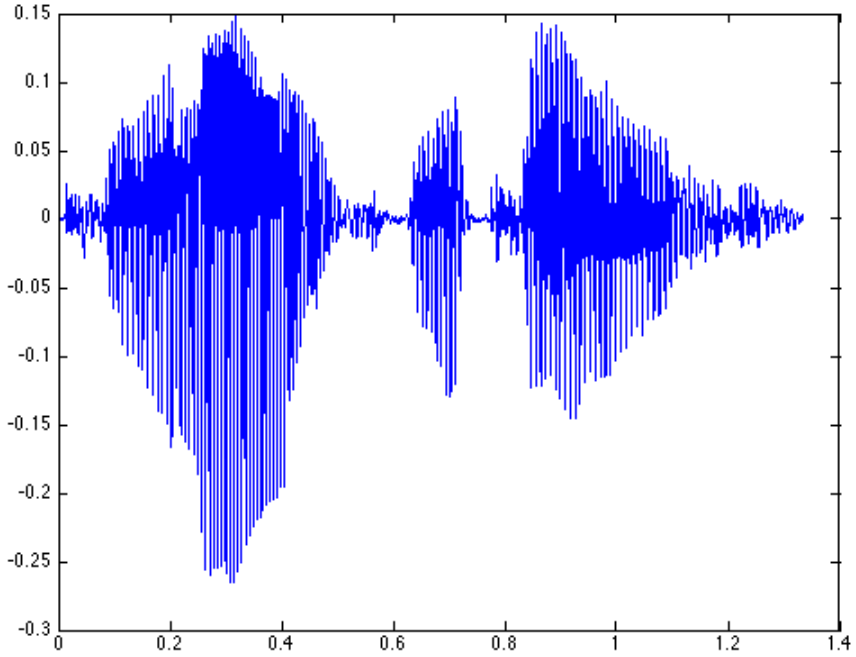
Input/Output plot for non-minimum phase filter and minimum phase filter.



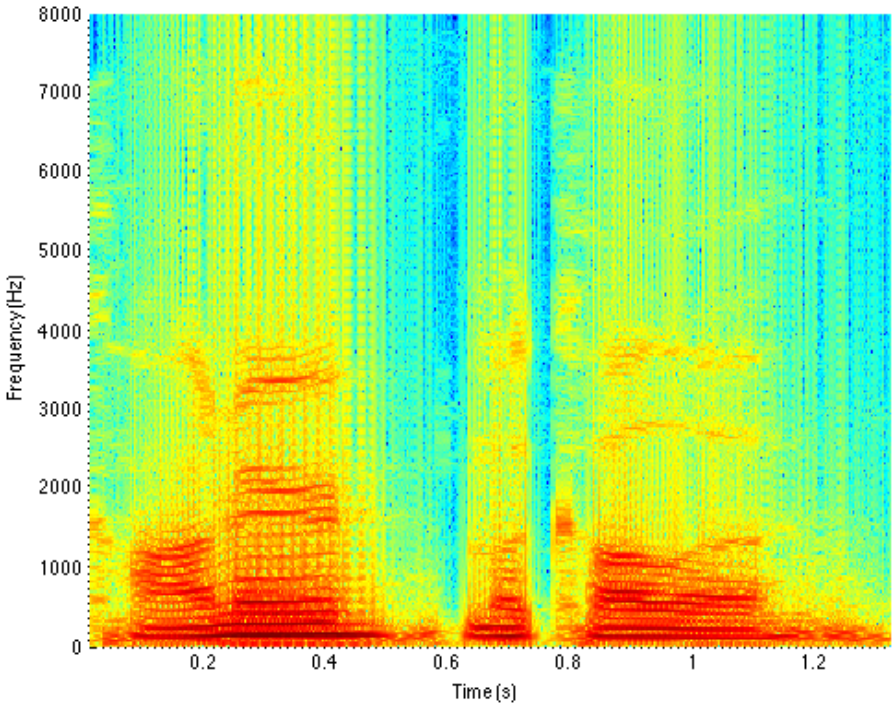
Problem 2

Connor McCullough:
/k/ /a/ /n/ /R/
/m/ /l/ /k/ /A/ /l/ /A/

Time Domain Plot:



Narrow Band Spectrogram:



Wide Band Spectrogram: