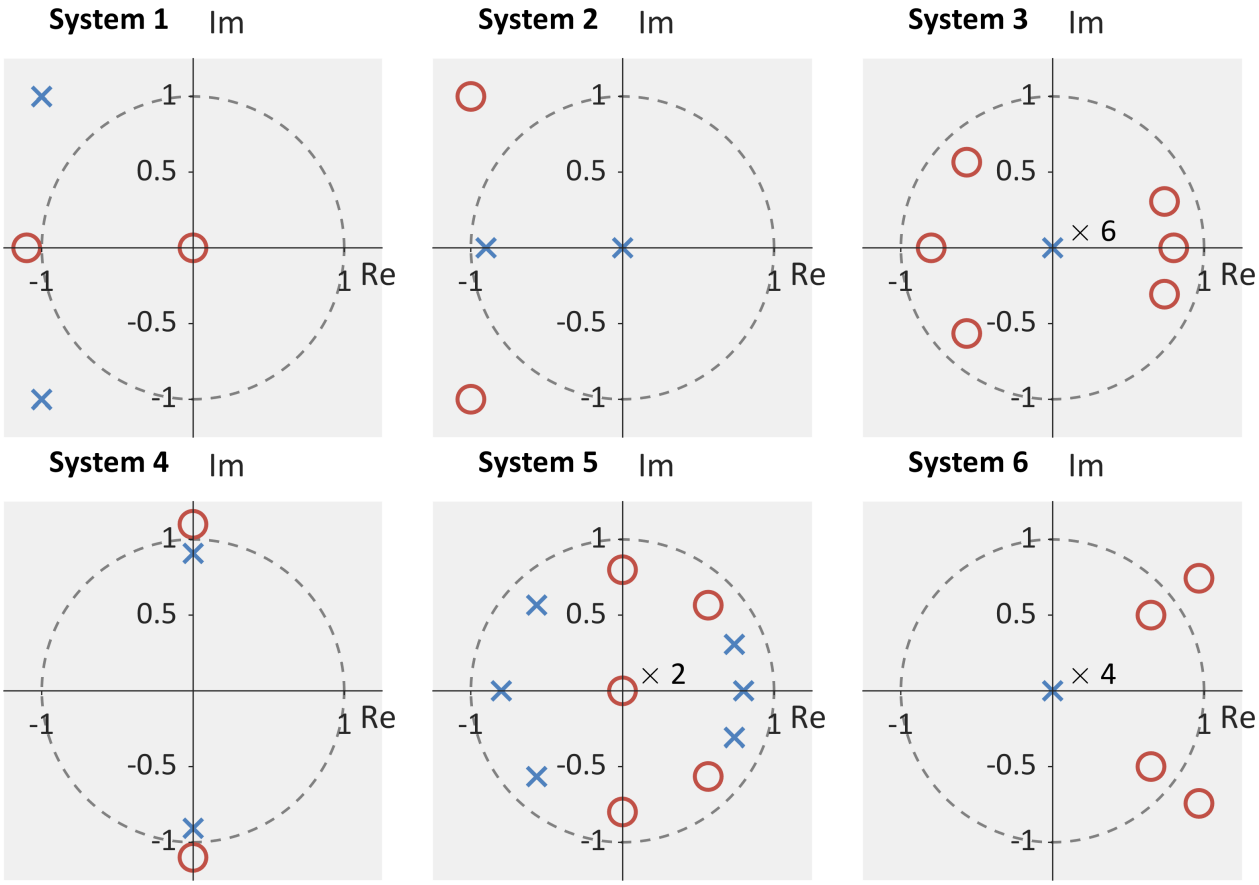
Full Name: _____

EEE 5502 (Fall 2022) – Practice **Frequency Selective Filters, 2022**

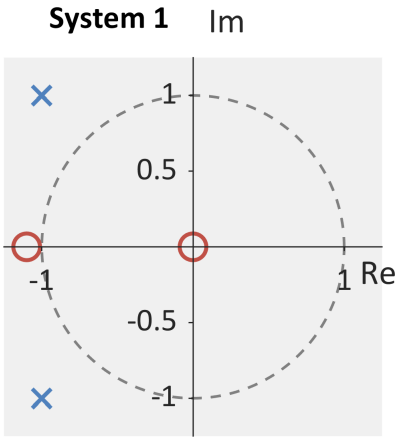
Question #1: For the following pole-zero plots, specify if they correspond to an FIR or IIR filter, if each filter is stable, if the filter has a linear phase, if the filter is invertible, and if the filter is minimum phase.

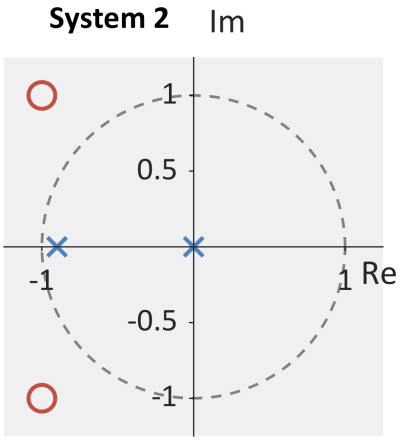


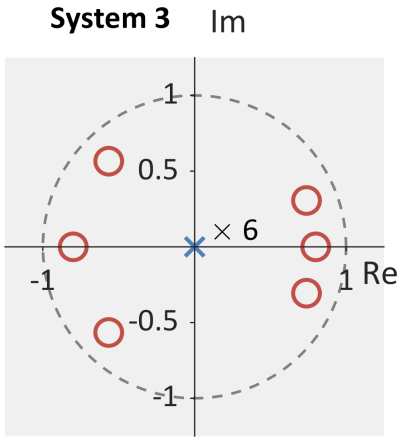
Solution:

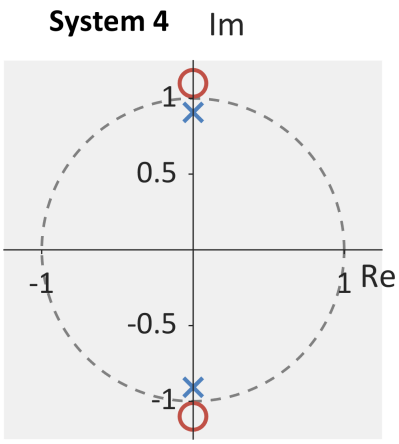
System 1: IIR, unstable, not linear phase, not invertible, not minimum phase
System 2: IIR, stable, not linear phase, not invertible, not minimum phase
System 3: FIR, stable, not linear phase, invertible, minimum phase
System 4: IIR, Stable, not linear phase, not invertible, not minimum phase
System 5: IIR, stable, not linear phase, invertible, minimum phase
System 6: FIR, stable, linear phase, not invertible, not minimum phase

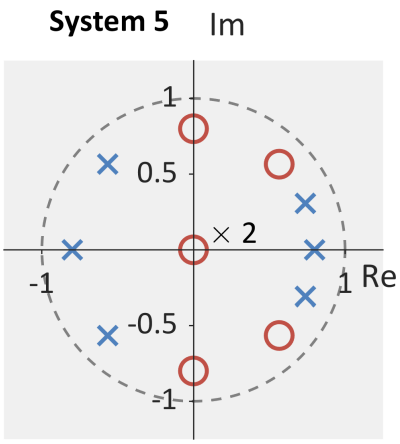
Question #2: Match the pole-zero plots with the associated magnitude responses.

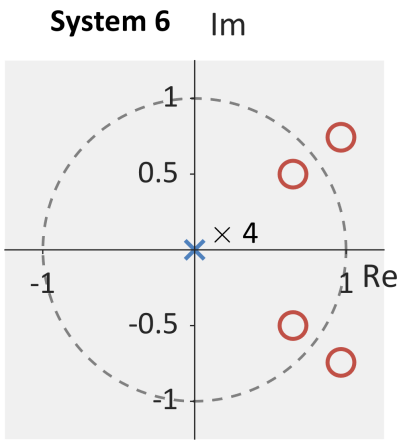


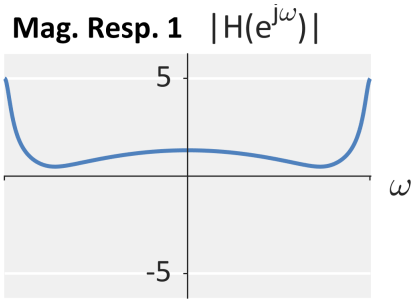


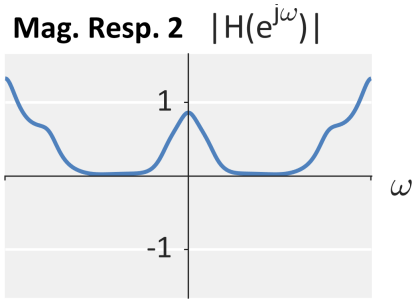


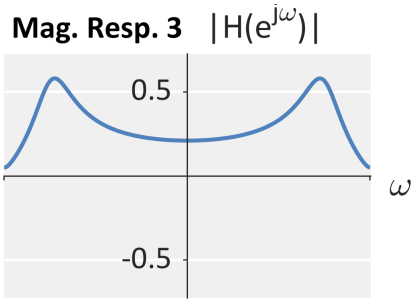


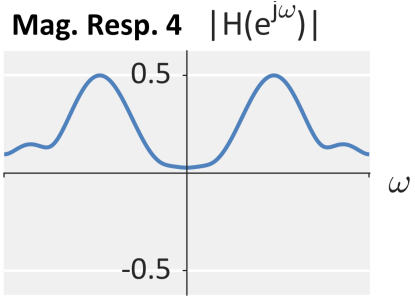


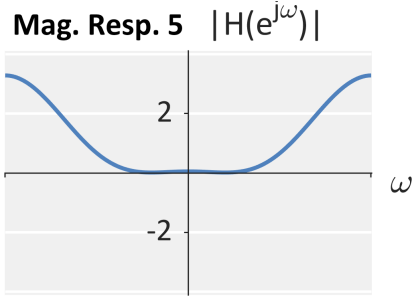


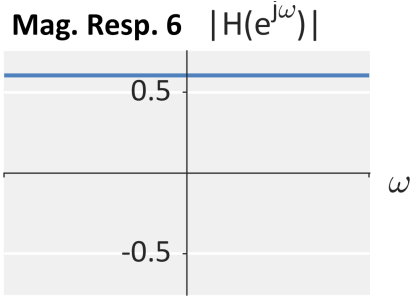






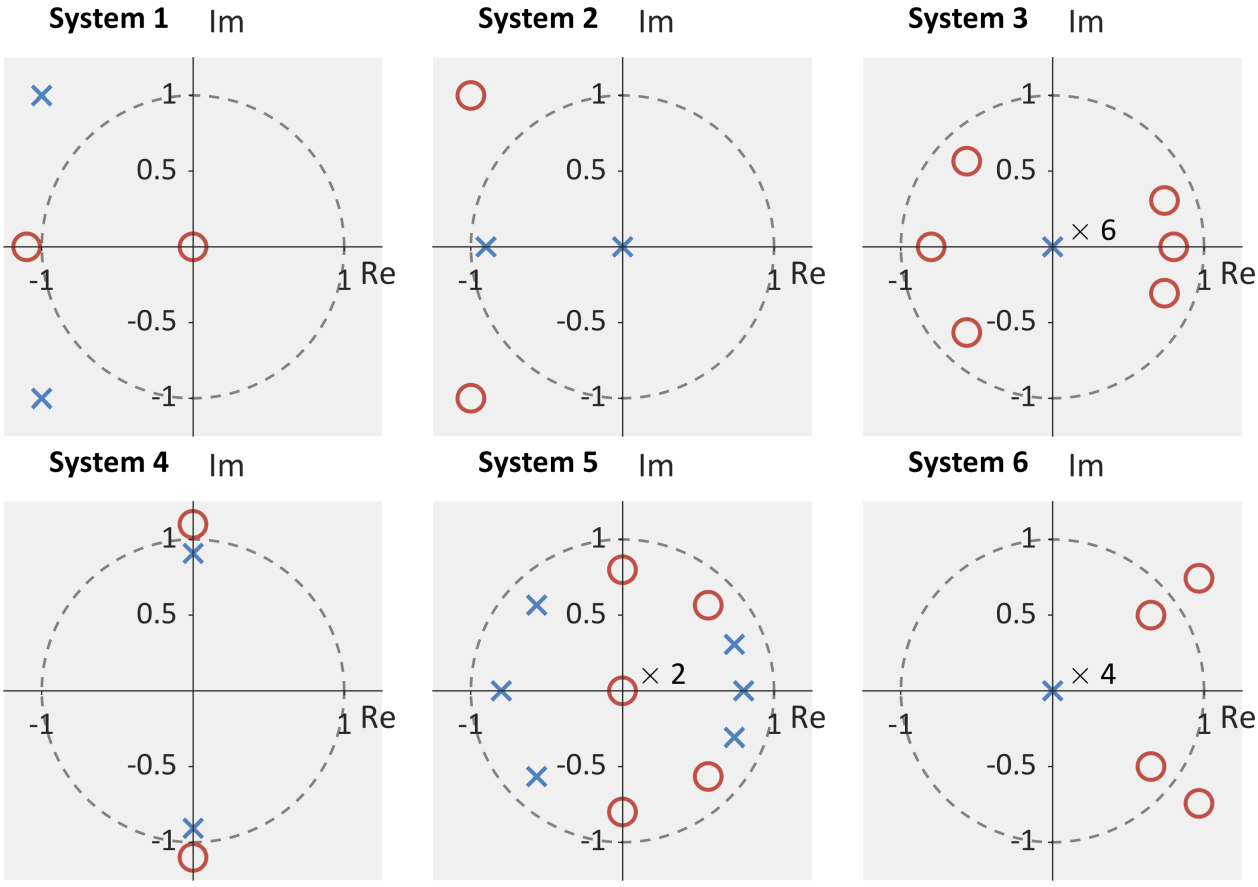


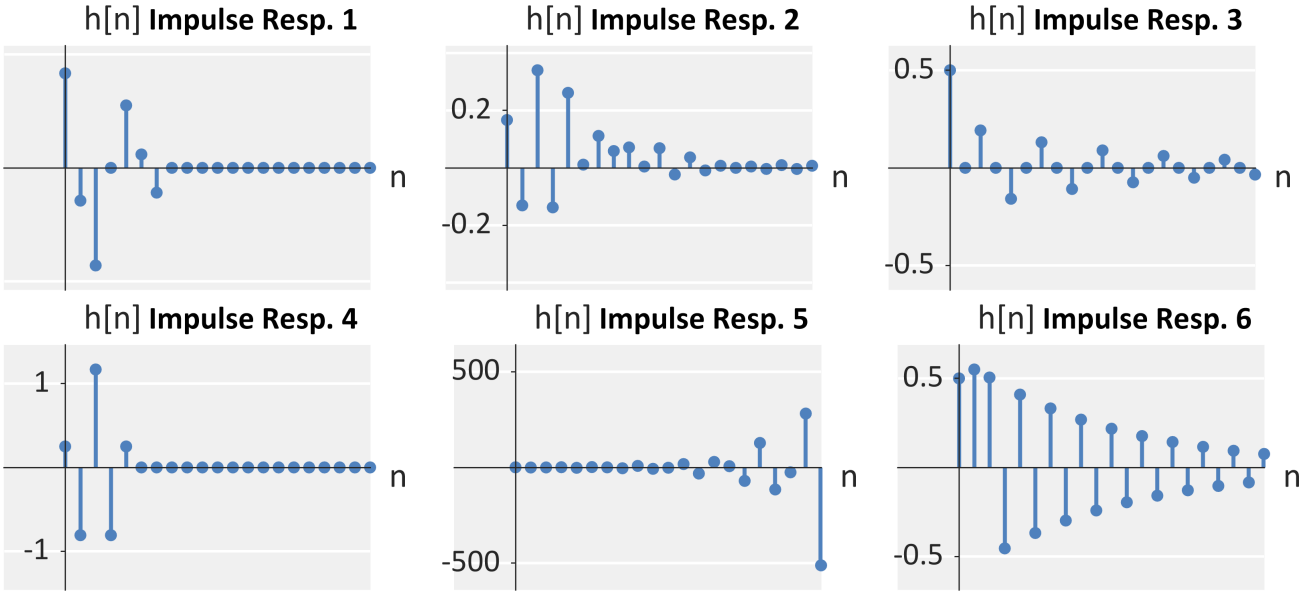




Solution:
System 1: Magnitude Resp. 3
System 2: Magnitude Resp. 1
System 3: Magnitude Resp. 4
System 4: Magnitude Resp. 6
System 5: Magnitude Resp. 2
System 6: Magnitude Resp. 5

Question #3: Match the pole-zero plots with the associated impulse responses.





Solution:
System 1: Impulse Resp. 5
System 2: Impulse Resp. 6
System 3: Impulse Resp. 1
System 4: Impulse Resp. 3
System 5: Impulse Resp. 2
System 6: Impulse Resp. 4