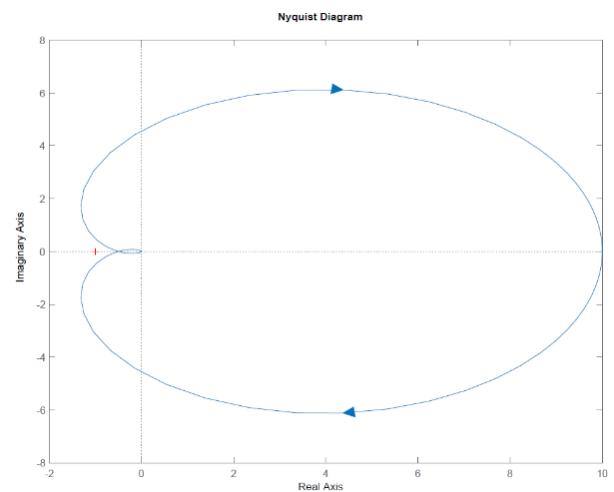
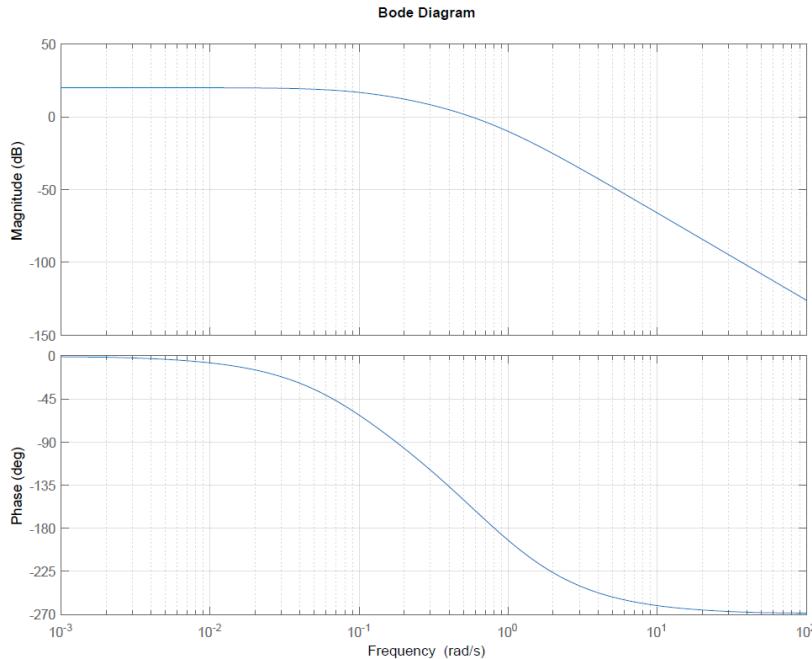
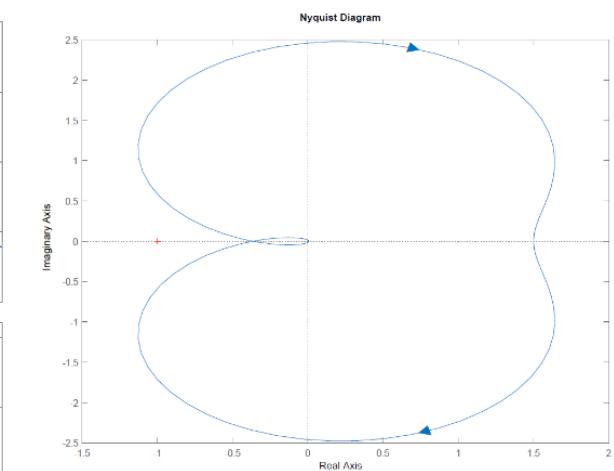
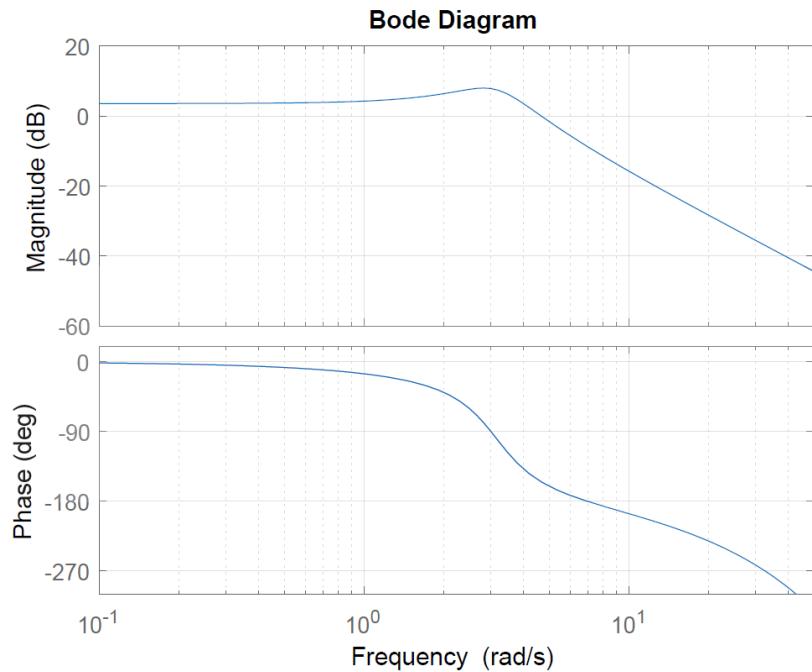


Function: $\frac{0.5}{(s+0.5)(s+1)(s+0.1)}$



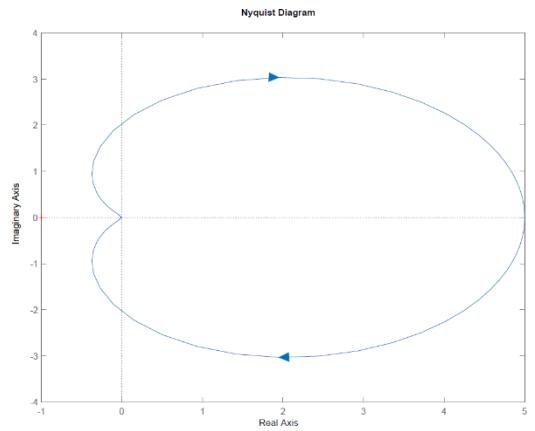
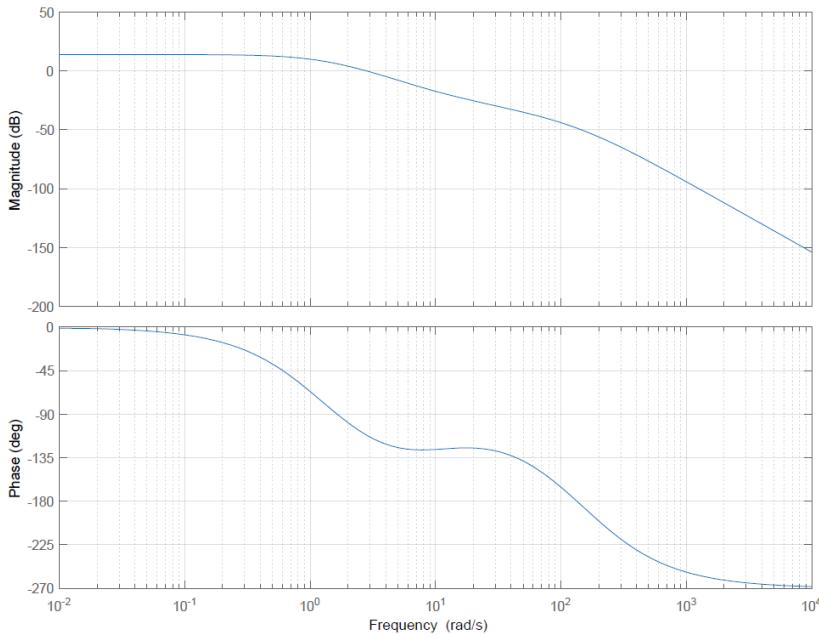
Gain Margin	Phase Margin
At what frequency does phase equal -180° ?	At what frequency does magnitude equal 0dB?
At this frequency, what is the magnitude (in dB)?	What is the phase at this frequency?
Compute the gain margin as number of dB below 0dB.	Compute phase margin as number of degrees above -180°

Function: $\frac{0.5e^{\frac{-s}{20}}}{(s+0.5)(s+1)(s+0.1)}$



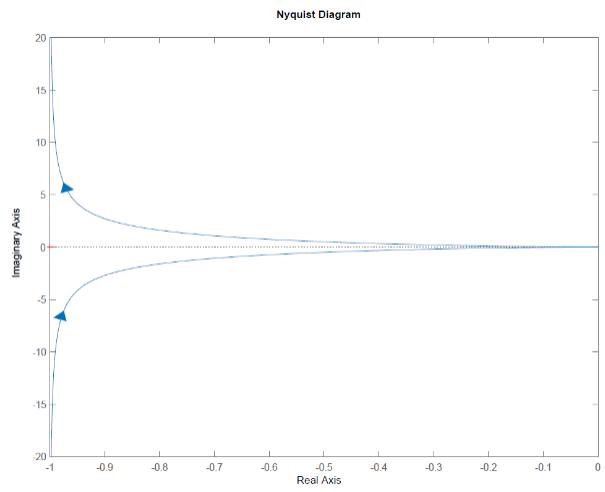
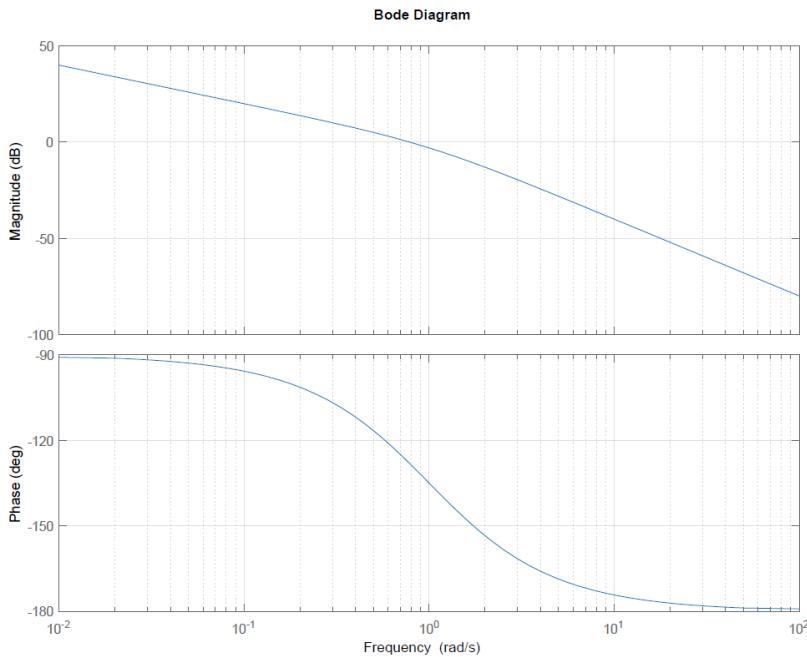
Gain Margin	Phase Margin
At what frequency does phase equal -180° ?	At what frequency does magnitude equal 0dB?
At this frequency, what is the magnitude (in dB)?	What is the phase at this frequency?
Compute the gain margin as number of dB below 0dB.	Compute phase margin as number of degrees above -180°

Function: $\frac{20,000s+20,000}{s^4+303s^3+20,902s^2+60,600s+40,000}$
 Bode Diagram



Gain Margin	Phase Margin
At what frequency does phase equal -180° ?	At what frequency does magnitude equal 0dB?
At this frequency, what is the magnitude (in dB)?	What is the phase at this frequency?
Compute the gain margin as number of dB below 0dB.	Compute phase margin as number of degrees above -180°

Function: $\frac{1}{s(s+1)}$



Gain Margin	Phase Margin
At what frequency does phase equal -180° ?	At what frequency does magnitude equal 0dB?
At this frequency, what is the magnitude (in dB)?	What is the phase at this frequency?
Compute the gain margin as number of dB below 0dB.	Compute phase margin as number of degrees above -180°