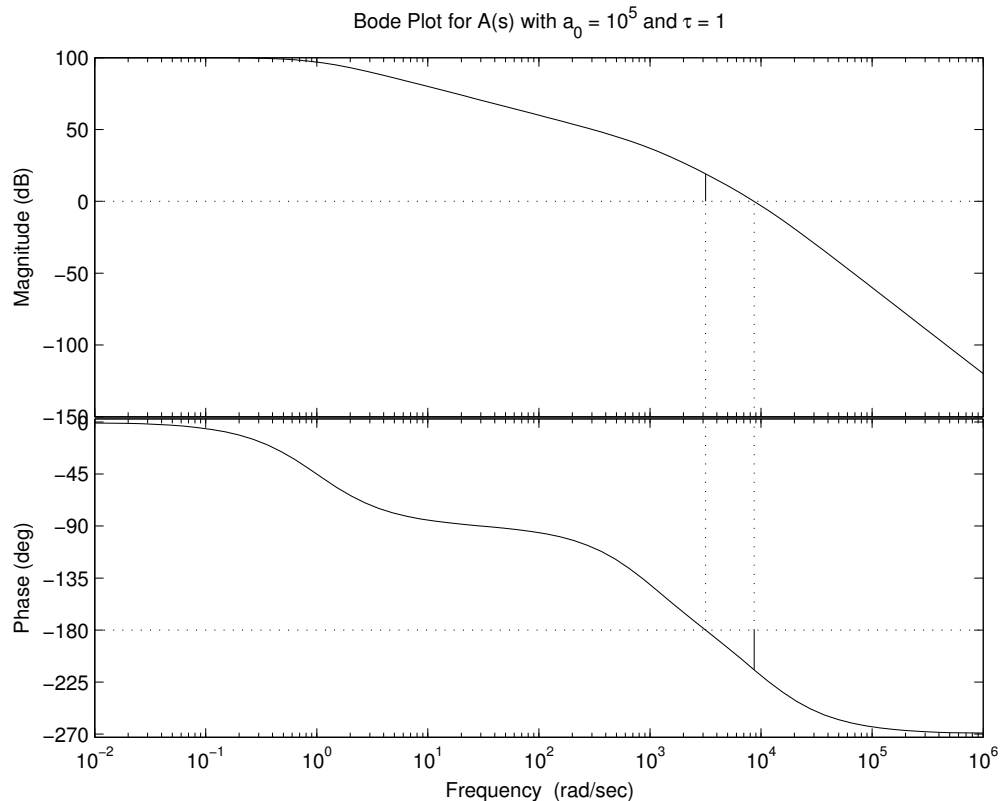


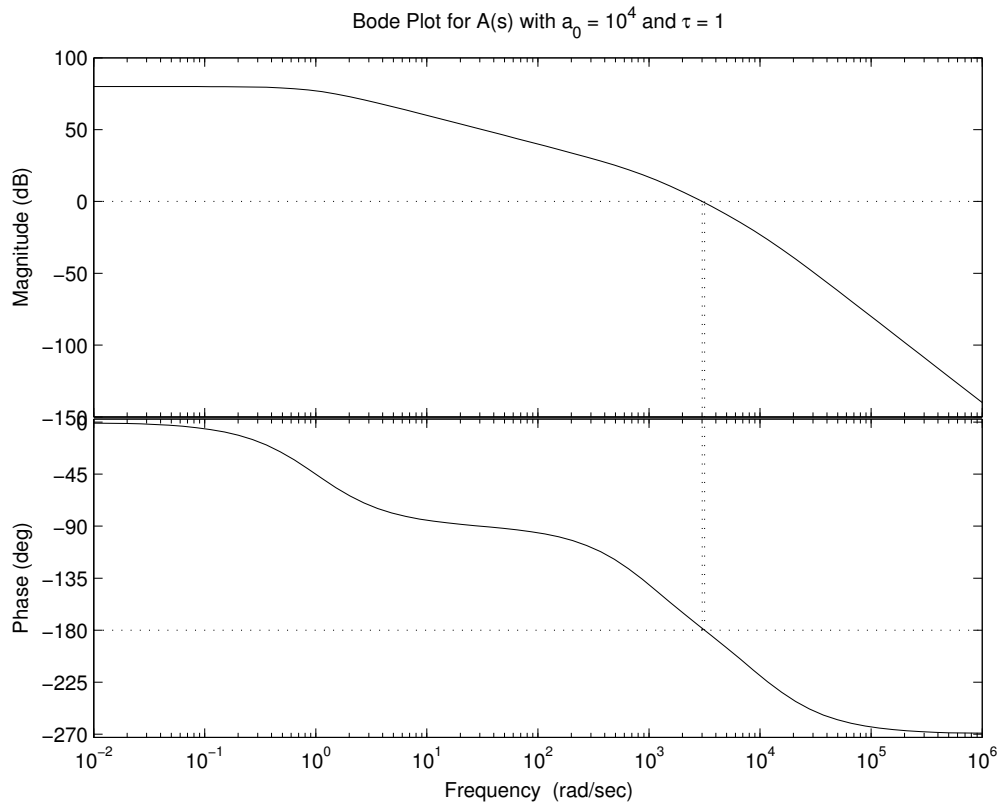
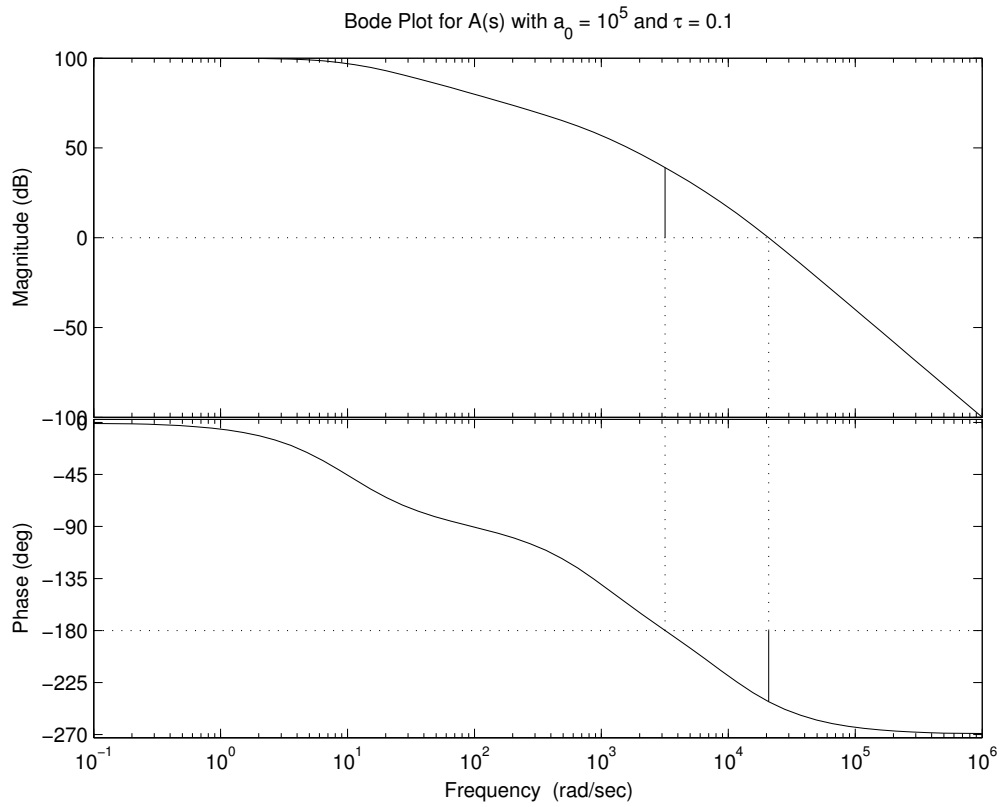
6.302 Prelab 2

Michael Salib

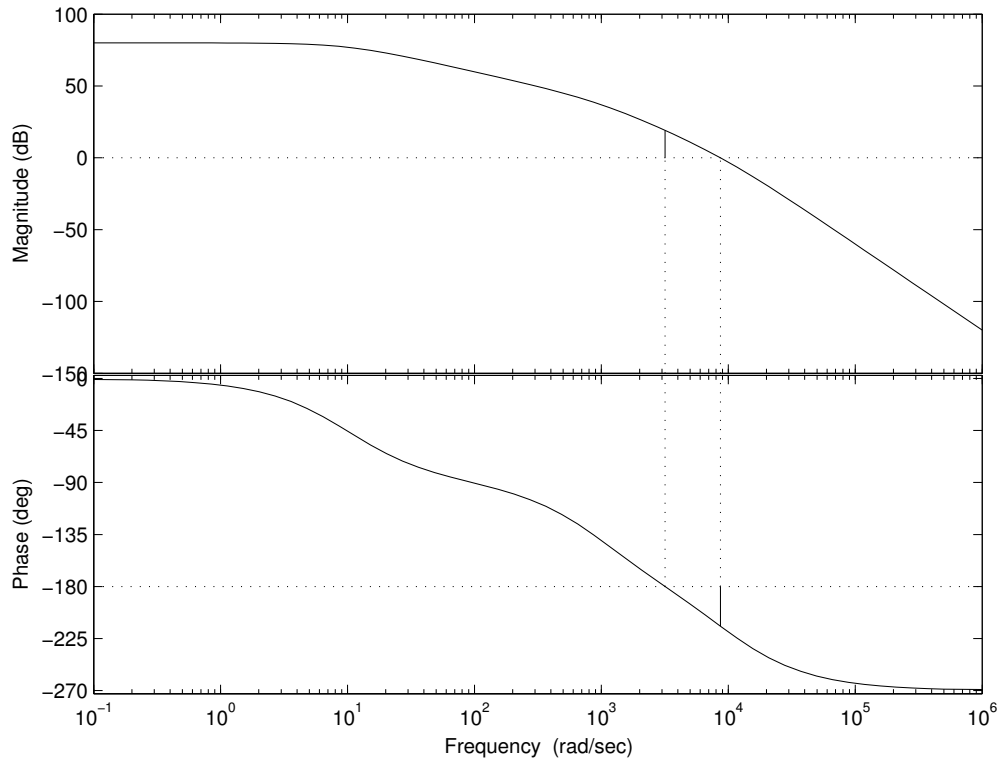
November 13, 2002

	Uncompensated	Gain	Lag	Lead
Crossover Frequency ω_c	2020	745	738	3670
Bandwidth ω_b	3200	1250	1256	773
Dominant Closed Loop Poles	$265 \pm 2093j$	$450 \pm 849j$	$412 \pm 817j$	$2007 \pm 4179j$
Damping Ratio ζ	0.126	0.469	0.450	0.433
Natural Frequency ω_n	2110	961	915	4636
Peak Overshoot P_o	1.67	1.19	1.21	1.22
Time to Peak t_p	0.0015	0.0037	0.0038	0.00075
Peak Magnitude M_p	4.01	1.21	1.24	1.28
Peak Frequency ω_p	2076	719	706	3665
Compensator Resister		4888 Ω	4878 Ω	Infinity
Compensator Capacitor			2.35 μF	3.93nF

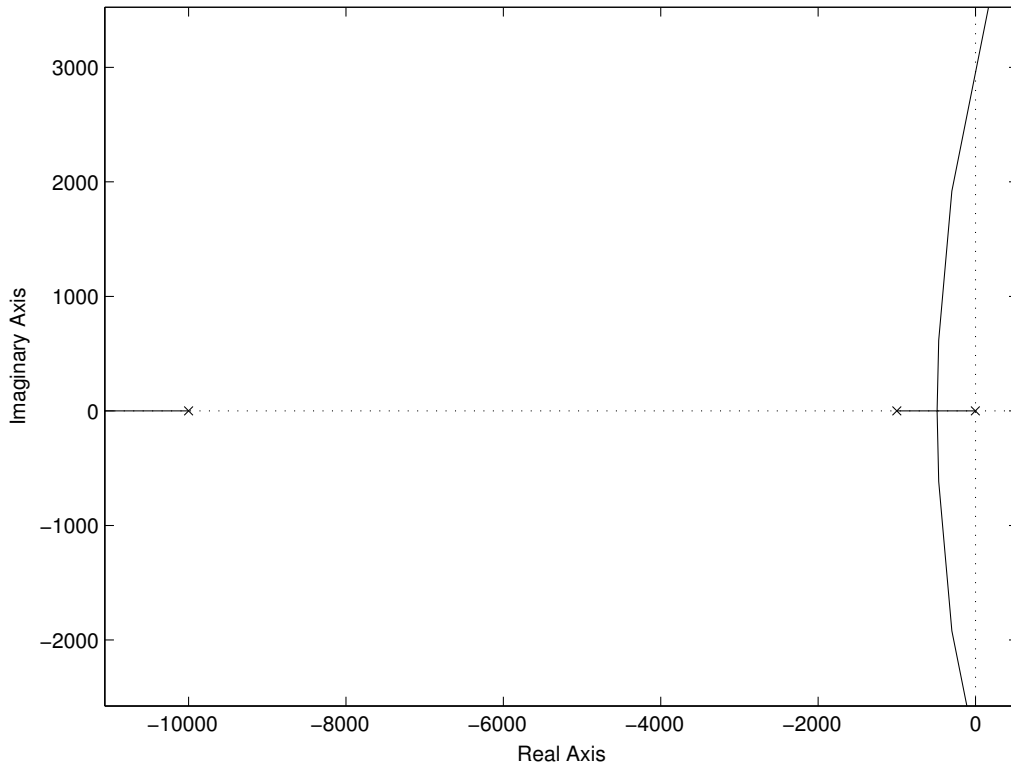




Bode Plot for $A(s)$ with $a_0 = 10^4$ and $\tau = 0.1$



Root Locus for Uncompensated System



Root Locus for Lag Compensated System

