ES3011 – Control Engineering 2021C
Homework #7

Name: ID:	
Name ID	

1.) (40 pts) Please consider the system described by the open-loop transfer function:

$$G(s) = \frac{K}{s(s+1)(s+8)}$$

Obtain the gain margin, phase margin, and cross-over frequencies of this system for K = 10 and K = 1000.

Assigned: 3/9/2021

Due: 3/16/2021 @ 11:59 pm

ES3011 – Control Engineering 2021C Homework #7		Assigned: 3/9/2021 Due: 3/16/2021 @ 11:59 pm
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2.) (10 pts) Please solve Problem B-7-26 from Ogar	ta (page 565).	

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Name:	ID:	
3.) (10 pts) Please solve Problem B-7-27 from Ogata	(page 565).	

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4.) (**Bonus**) (**20 pts**) Please design a lead compensator for the system described by the open-loop transfer function:

$$G(s) = \frac{1}{s(s+1)}$$

with a desired gain crossover frequency $\omega_G = 10$ rad/s and a desired phase margin PM = 60° .

Assigned: 3/9/2021

Due: 3/16/2021 @ 11:59 pm