

Analysis of Engineering Systems – MAE 488

Homework # 8

Spring 2019

Instructions: SHOW YOUR WORK! *If insufficient work is shown, you will receive no credit (even for a correct answer). As always, be sure to include units where appropriate. All plots should have labels on each axis (with units), a title (e.g. "MAE 488, Homework 1, Problem 1, Part a"), and a legend if more than one plot is in the same figure (except for subplots).*

Solve the following problems from Chapter 10 of the textbook.

Problems: 8, 9, 12 (a,b,c), 13(b), 17(c), 10.29(plot $\omega(t)$ and $\tau(t)$), 60 (use PD controller)

There is a typo in problem 8. You need to calculate K_P , K_I , K_D , T_I , and T_D .

Extra Credit (10%): 10.73S (be sure to compare the results)

An M indicates the problem requires Matlab. An S indicates the problem requires Simulink.