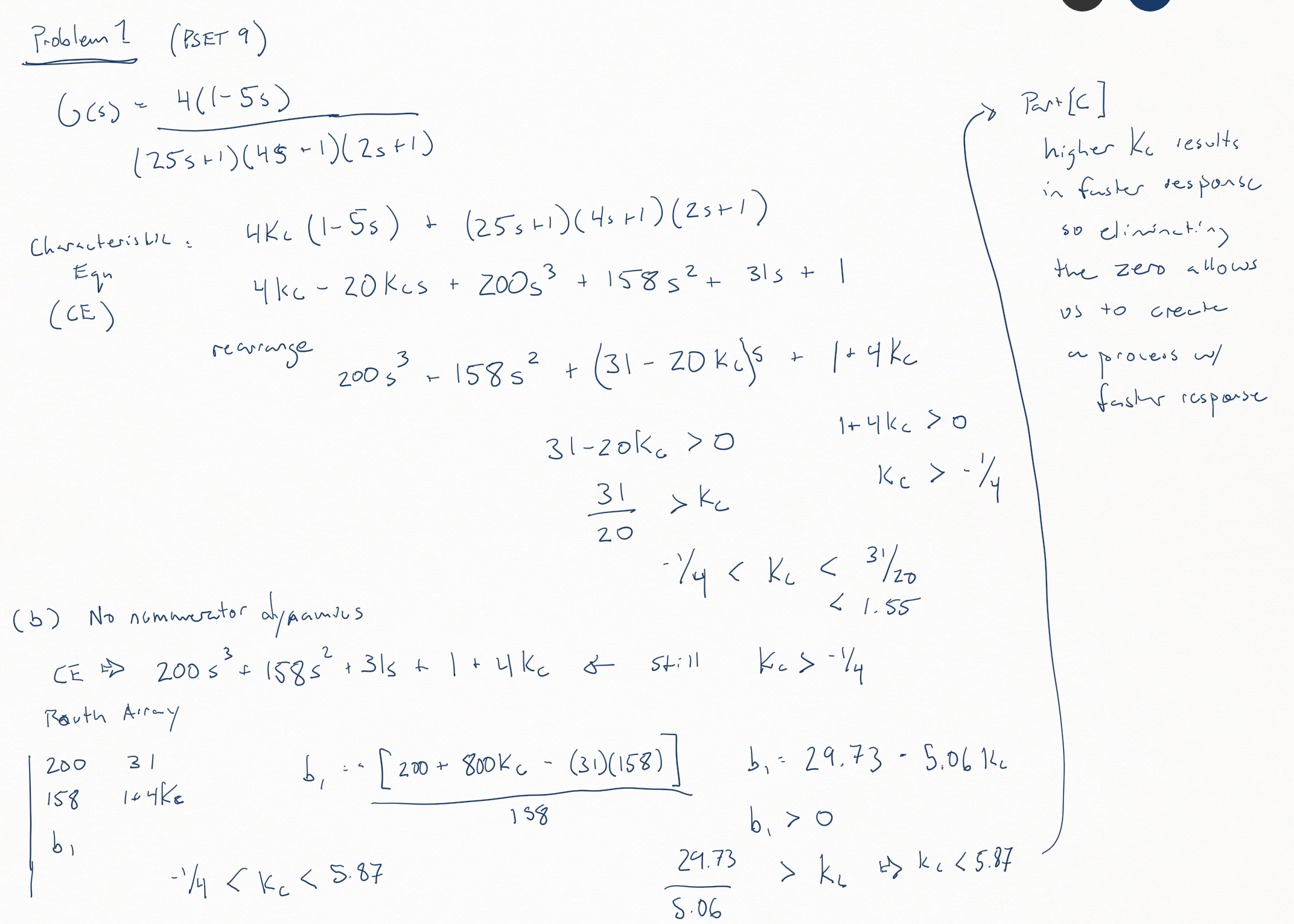
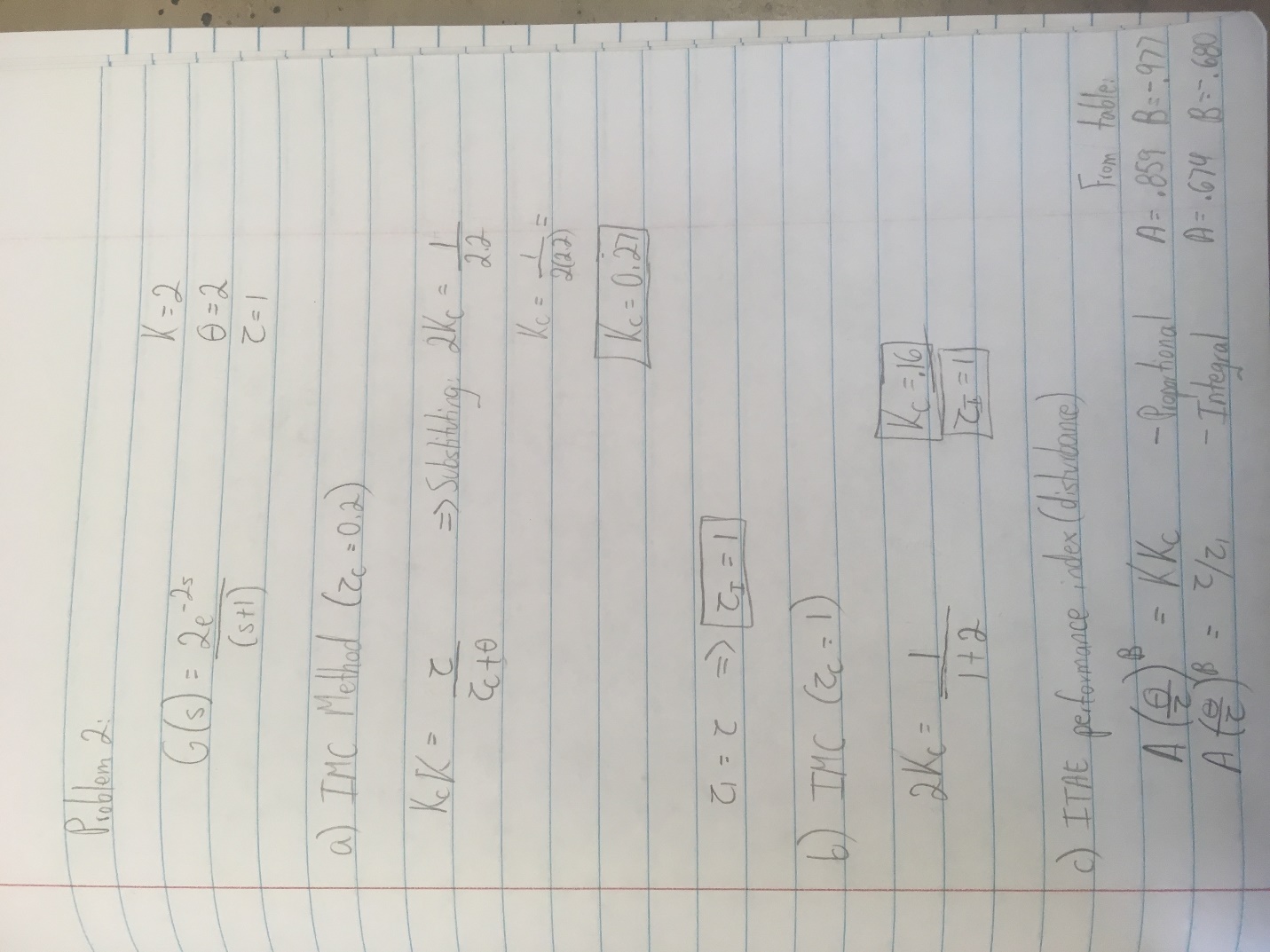
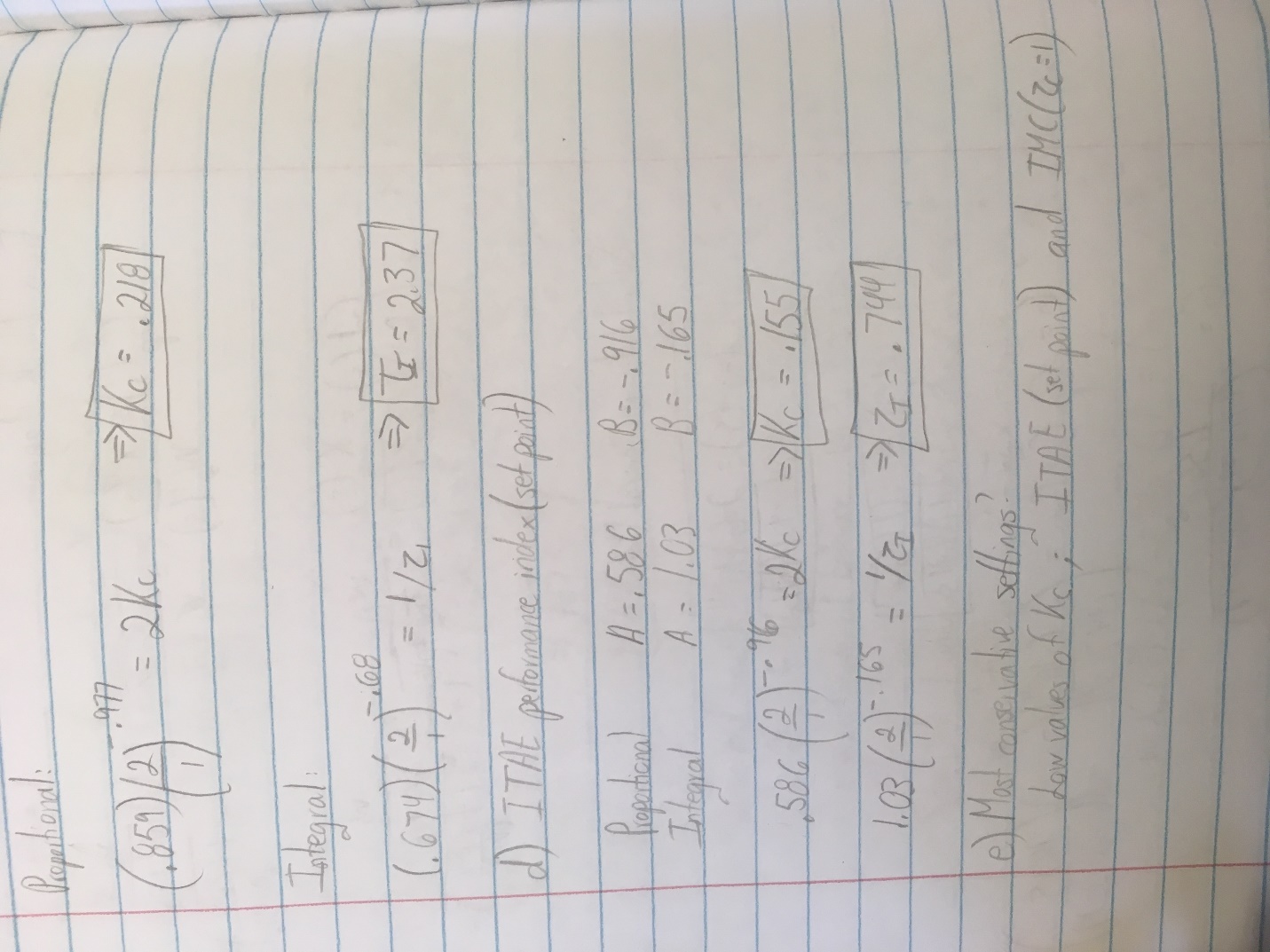
**PSET 9 Key (10.29.2018)**

**Problem 1:**



**Problem 2:**





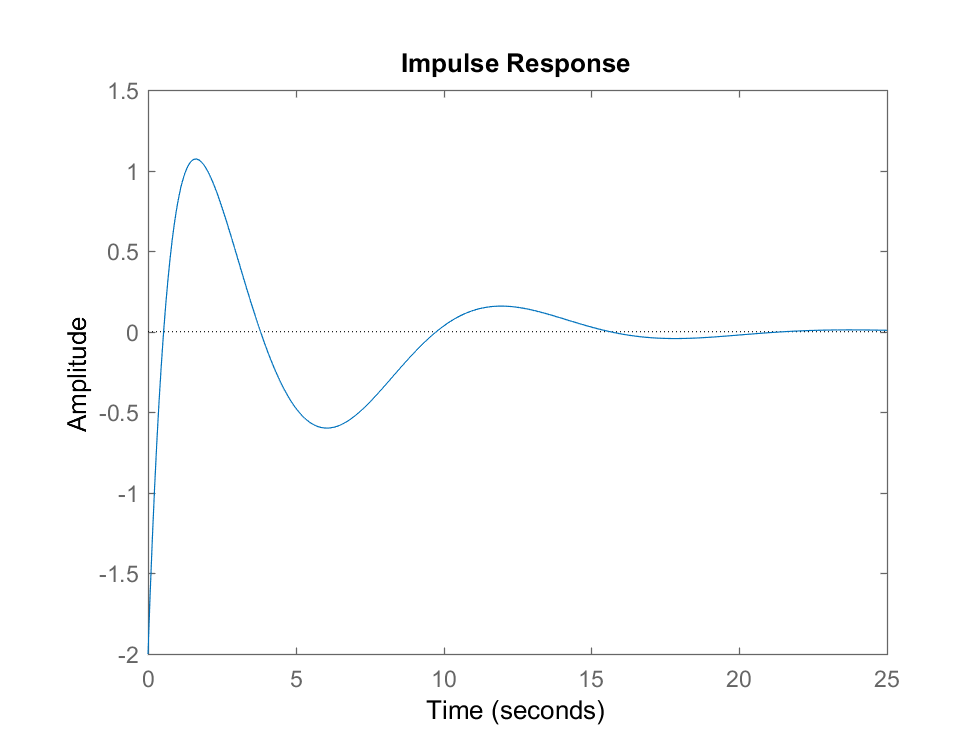
Part f) Use impulse command in Matlab. Here is the code I used:

s = tf('s')

G = 2\*exp(-2\*s)/(s+1)

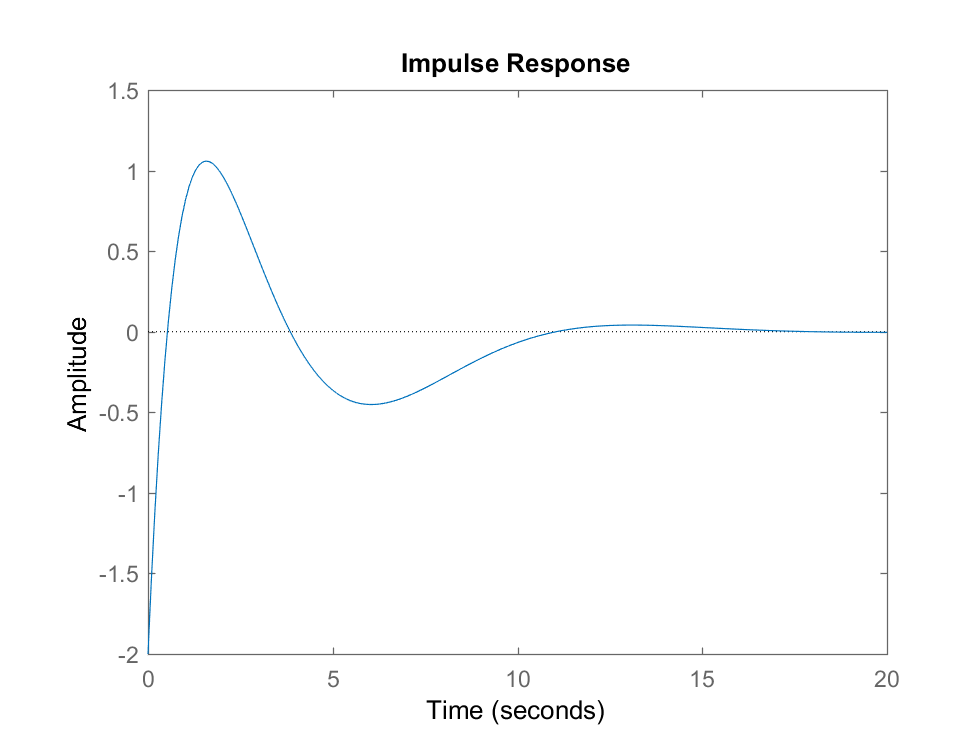
Gc = 0.155\*(1+1/(0.744\*s)) [using the ITAE set point values from above]

impulse(pade(G)/(1+pade(G)\*Gc)) [note the pade approx. is invoked for Matlab impuse function]

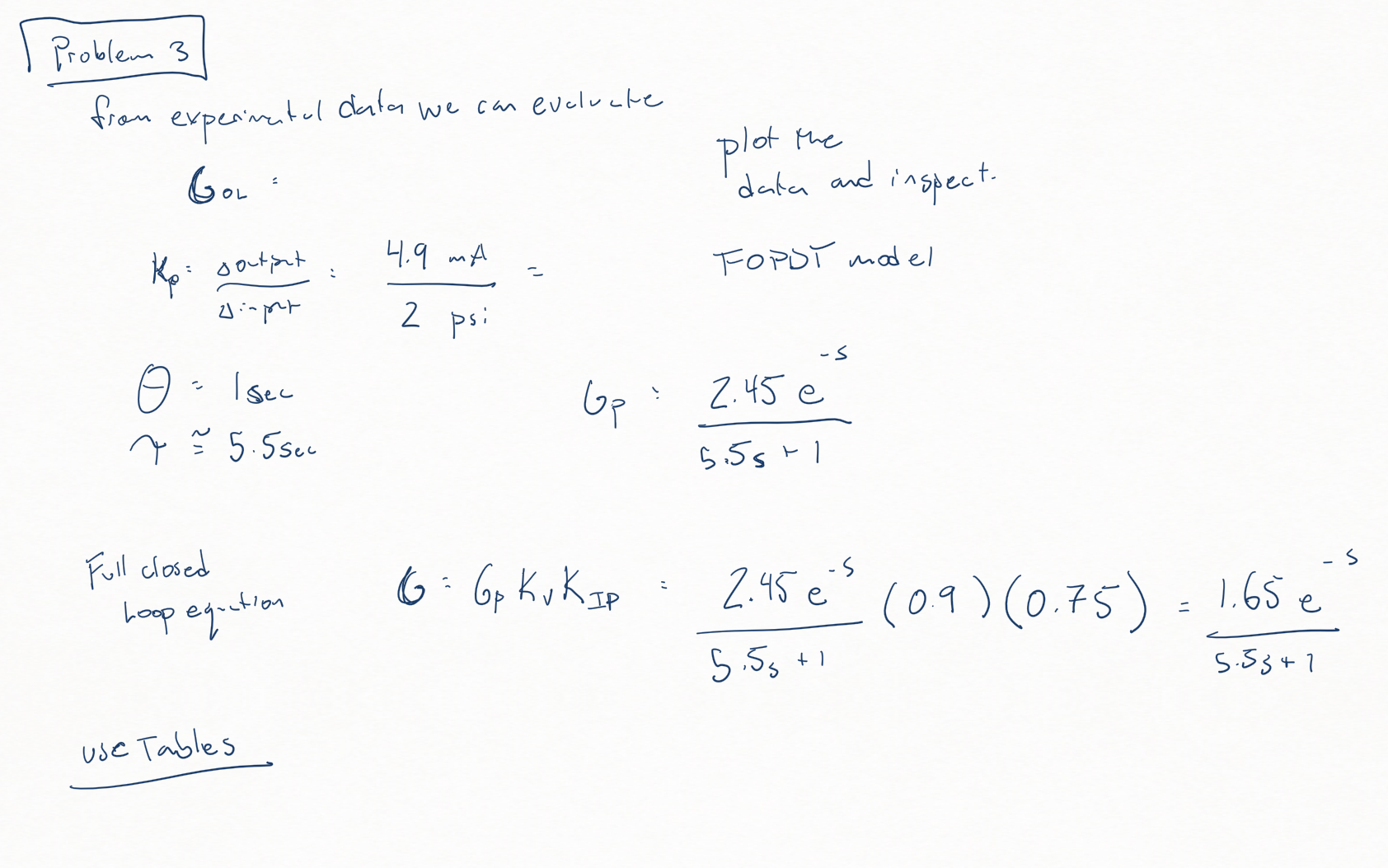
ITAE Set Point

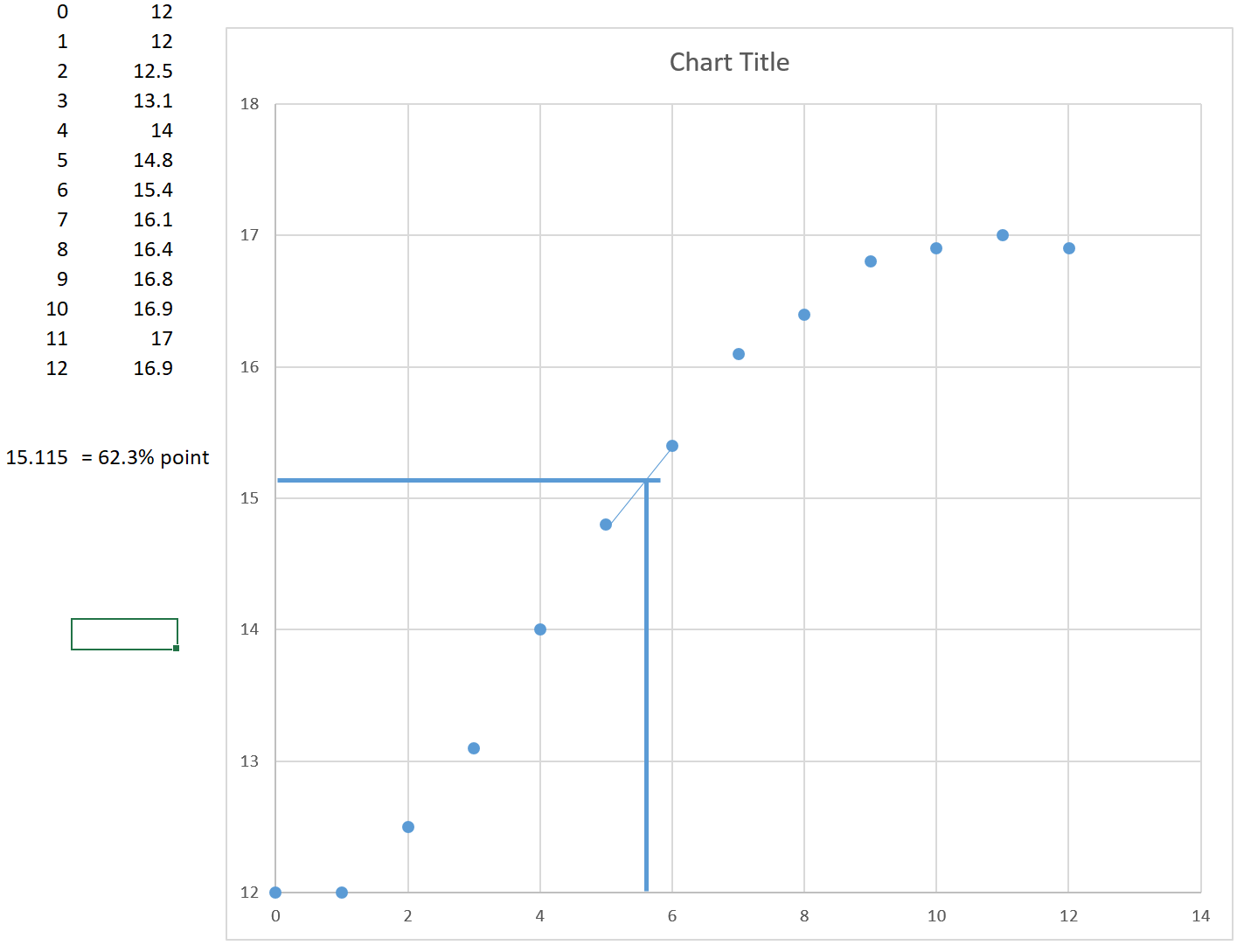
Change transfer function for IMC values:

Gc = 0.16\*(1+1/(1\*s))

IMC (where Tau\_c = 1)

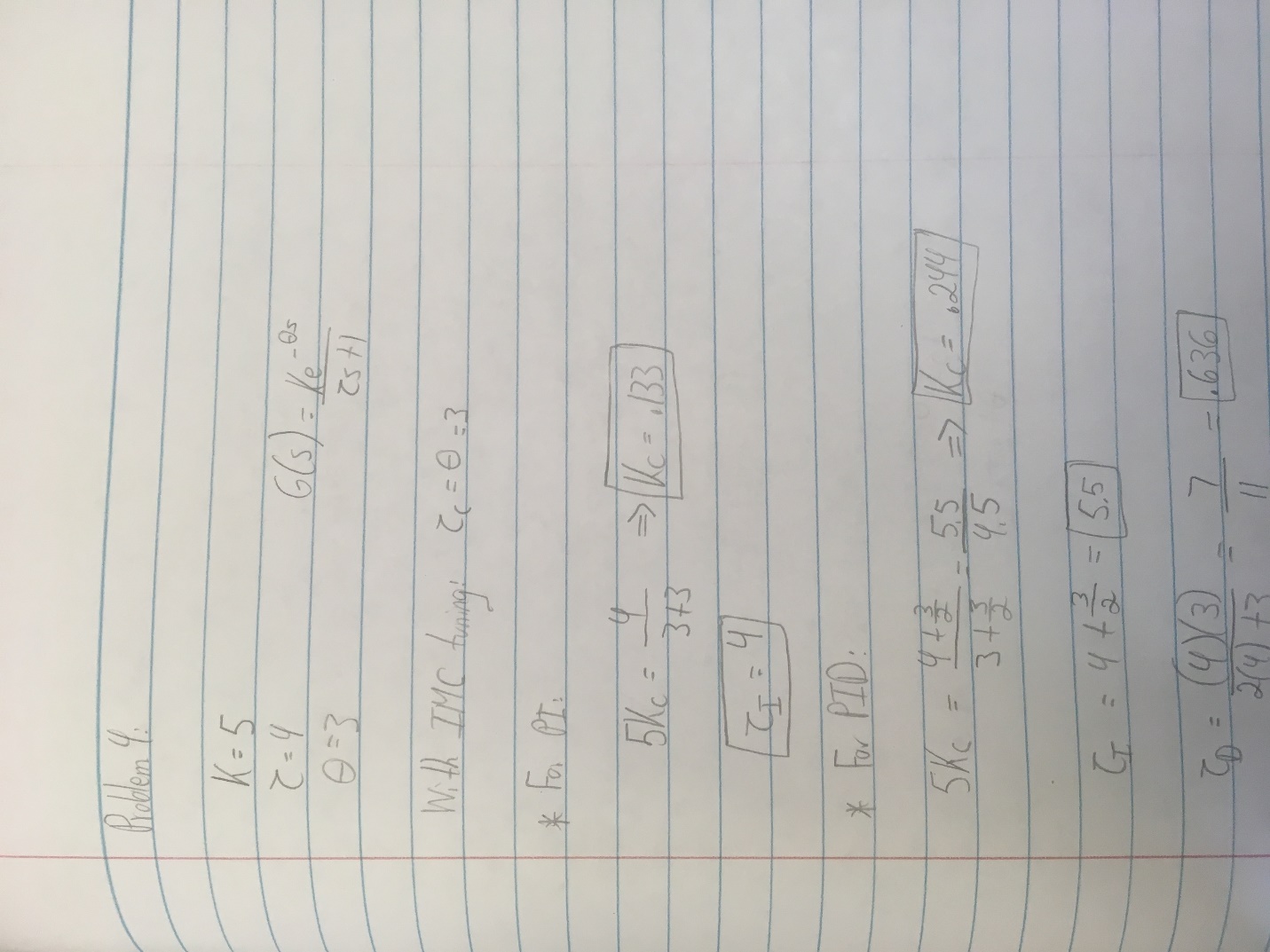
**Problem 3:**



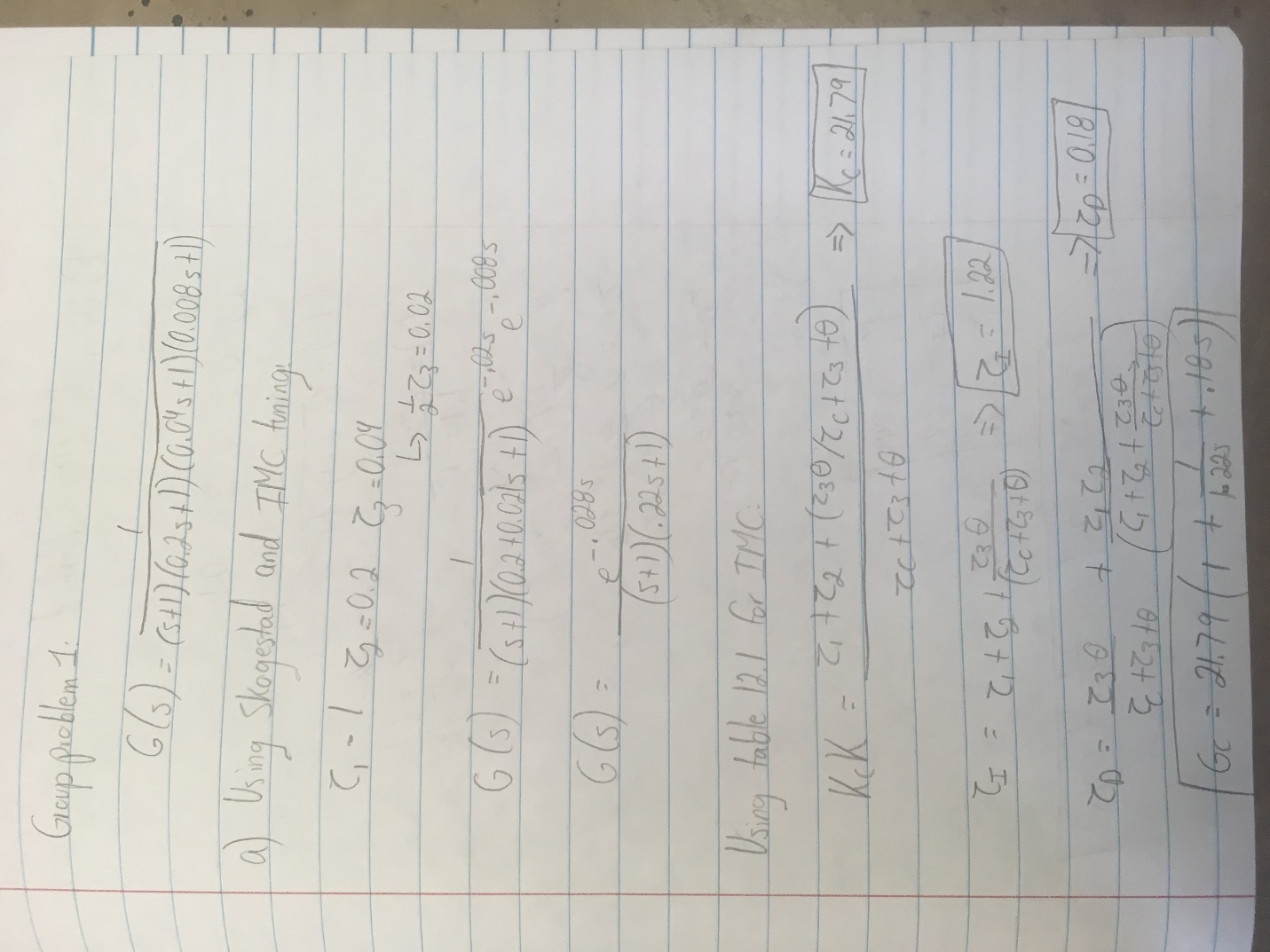


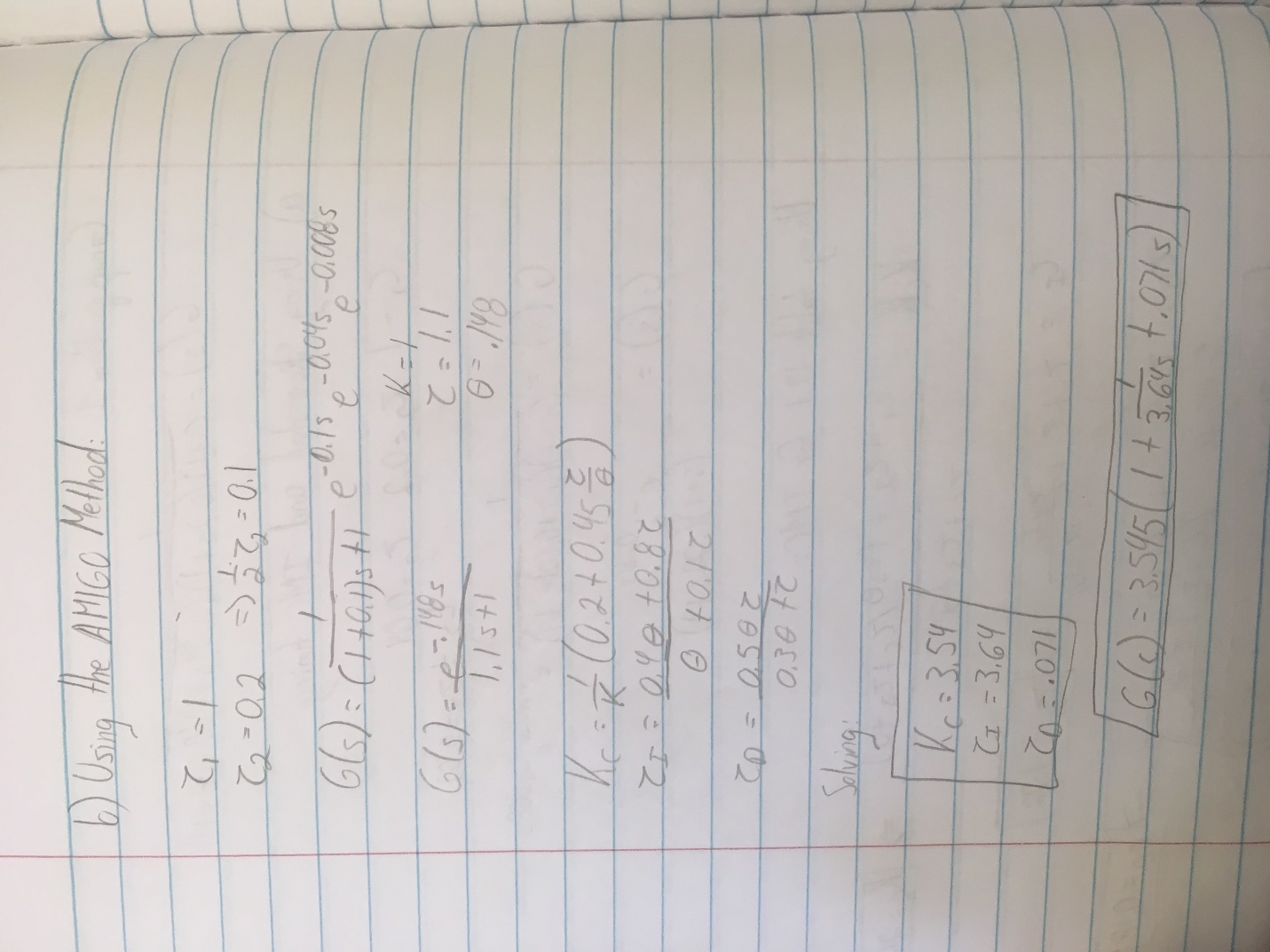
NOTE: this one is not worked out to the end, you then use the tables to determine the controller

**Problem 4:** Follow tables



**Group Problem 1:** Follow IMC table in book for second order form, then plot with Matlab step command





**Group problem 2 [ Dr. Reuel will check this result on 11.5.2018]**

