Homework #8 Justin Garcia

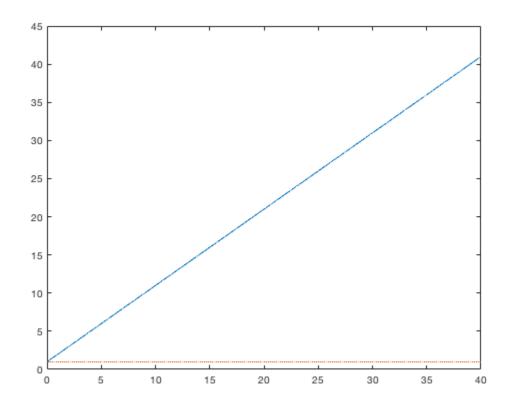
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Part Two

```
x0= [1 1];
J = .001; % Kg-m^2
A = [0,1;0,0];
B = [0;1/J];
C = [1,0;0,0];
D = [0];

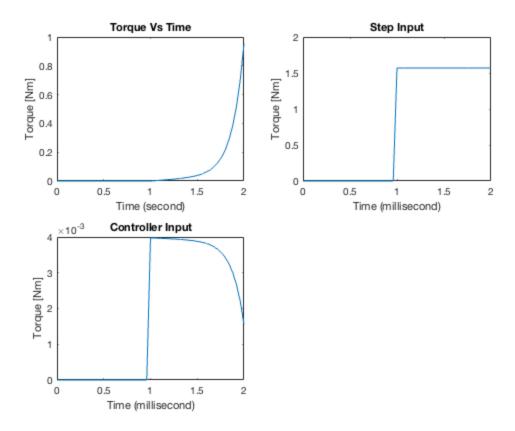
SysResponse = ss(A,B,C,D);
[y,t,x] = initial(SysResponse,x0);
plot(t,x)
```



Part Four

P = .02905;

```
J = .001;
A = P/3;
B = 3000*P;
sim('HW8S')
subplot(2,2,1);
plot(T,Y)
title('Torque Vs Time');
xlabel('Time (second)');
ylabel('Torque [Nm]');
subplot(2,2,2);
plot(T,Reference)
title('Step Input');
xlabel('Time (millisecond)');
ylabel('Torque [Nm]');
subplot(2,2,3);
plot(T,C_Input)
title('Controller Input');
xlabel('Time (millisecond)');
ylabel('Torque [Nm]');
open_system('HW8S')
                              C_Input
                             To Workspace3
                                  s+P/3
                                                      J.s<sup>2</sup>
                                 s+3000°P
                                                                          To Workspace
                                                     Transfer Fcn
                    Gain
                                Transfer Fcn1
         To Workspace2
```



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