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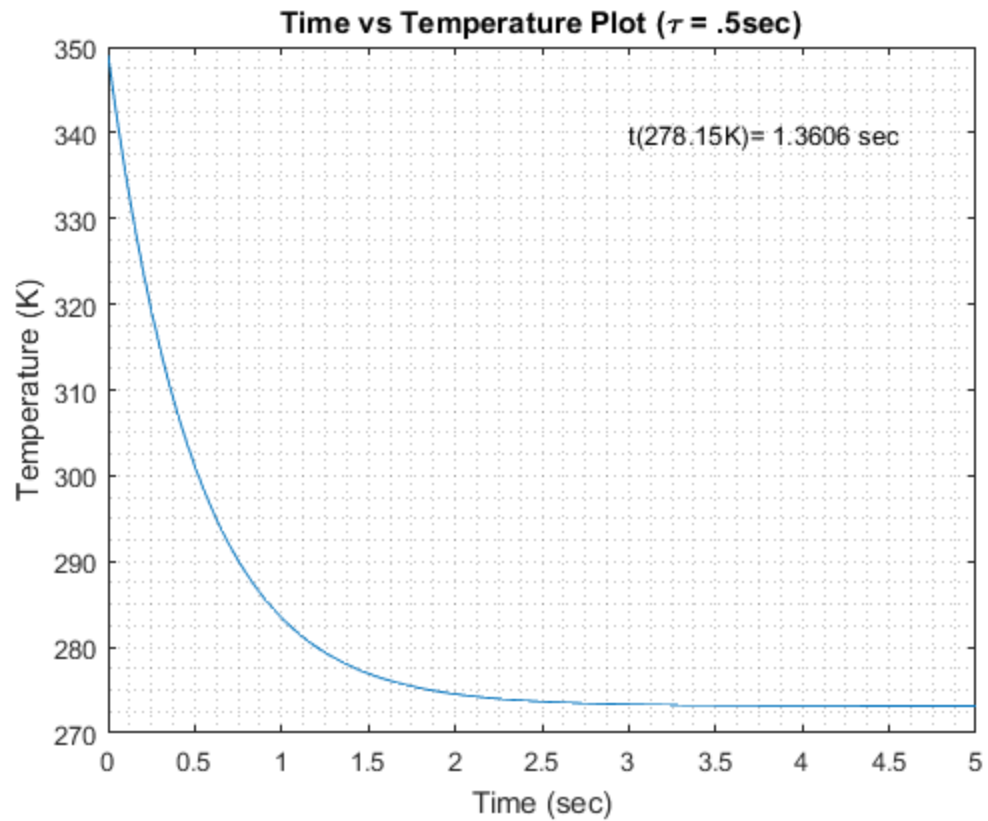
```
clear all
close all
clc
```

## Question 1

```
%plot a 1st order response with a time constant of 0.5sec
taul=0.5;

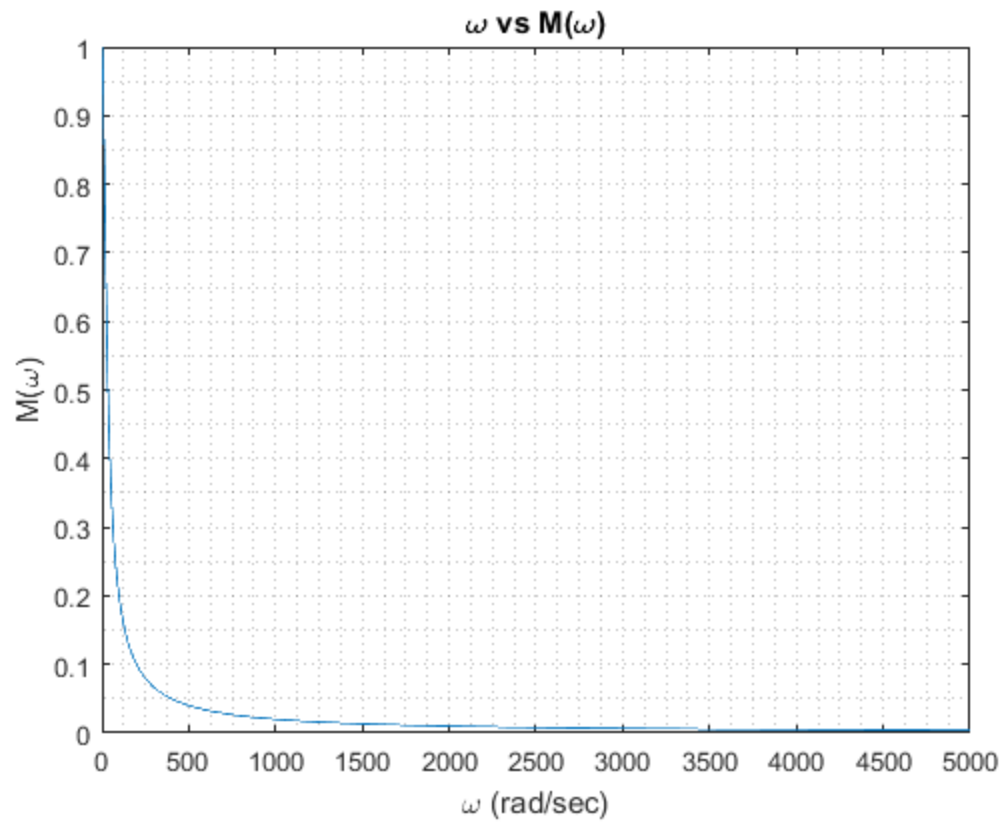
t=linspace(0,5,100);

T_final=273.15;
T_start=76+273.15;
% Temp_tau_std_value_BBI(i)=BBI_temp_final-((BBI_temp_final-
Temp_start_poly_BBI)*exp(-new_time_start_std_BBI(i)/
Tau_std_value_BBI));
for i=1:length(t)
    temp1(i)=T_final-((T_final-T_start)*exp(-t(i)/taul));
end
T_5deg=5+273.15;
time_5deg=-taul*log((T_5deg-T_final)/(T_start-T_final));
plot(t,temp1)
text(3, 340, ['t(278.15K)= ' num2str(time_5deg) ' sec'])
% ylim([.5, 80])
grid minor
title('Time vs Temperature Plot (\tau = .5sec)')
xlabel('Time (sec)')
ylabel('Temperature (K)')
```



## Question 4

```
tau4=0.05;  
w4=linspace(0,5000,10000);  
for i=1:length(w4)  
    m4(i)=1/(sqrt(1+(w4(i)*tau4)^2));  
end  
figure  
plot(w4,m4);  
title('\omega vs M(\omega)')  
xlabel('\omega (rad/sec)')  
ylabel('M(\omega)')  
grid minor
```



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