

%problem 4. rc circuit problem.. differentiation

close all; clear all; clc;

f=inline('10*sin(100*pi*t)');

h = .001;

t = 0:h:.04;

for i=1:length(t)-1

 y(i)=(f(t(i)+h)-f(t(i)))./h;

end

figure

subplot(3,1,1)

plot(t,f(t)),ylabel('Vc(t)')

title('Vc vs t')

subplot(3,1,2)

plot(t(1:length(t)-1),y.*0.003736),ylabel('Vr(t)')

title('Vr vs t')

subplot(3,1,3)

plot(t(1:length(t)-1),(y.*0.003736+f(t(length(t)-1)))),ylabel('Vs(t)')

title('Vs vs t')