***MICHAEL SHALLANGWA***

***16/ENG01/019***

***CHEMICAL ENG***

***MATH ASSIGNMENT5***

***ANSWERS***

commandwindow

clear

clc

syms t

Q(t)=0.25\*sin(25\*pi\*t)

V(t)=0.5\*cos(0.2\*pi\*t)

I=diff(Q(t))

tn=(0:0.0001:0.35)

In=subs(I,tn)

figure(1)

plot(tn,In)

xlabel('time(sec)')

ylabel('current(amp)')

grid on

grid minor

P=I\*V

Pn=subs(P,tn)

figure(2)

plot(tn,Pn)

xlabel('time(sec)')

ylabel('power(watts)')

grid on

grid minor

figure(3)

plot(tn,In,'r',tn,Pn,'b')

axis tight

xlabel('time(sec)')

ylabel('variable')

title('plot of variable against time')

grid on

grid minor

legend('current(A)','power(W)','location','best')

Pn(t) =

[ (25\*pi)/8, (25\*pi\*cos(pi/400)\*cos(pi/50000))/8, (25\*pi\*cos(pi/200)\*cos(pi/25000))/8, (25\*pi\*cos((3\*pi)/400)\*cos((3\*pi)/50000))/8, (25\*pi\*cos(pi/100)\*cos(pi/12500))/8, (25\*pi\*cos(pi/80)\*cos(pi/10000))/8, (25\*pi\*cos((3\*pi)/200)\*cos((3\*pi)/25000))/8, (25\*pi\*cos((7\*pi)/400)\*cos((7\*pi)/50000))/8, (25\*pi\*cos(pi/50)\*cos(pi/6250))/8, (25\*pi\*cos((9\*pi)/400)\*cos((9\*pi)/50000))/8, (25\*pi\*cos(pi/40)\*cos(pi/5000))/8, (25\*pi\*cos((11\*pi)/400)\*cos((11\*pi)/50000))/8, (25\*pi\*cos((3\*pi)/100)\*cos((3\*pi)/12500))/8, (25\*pi\*cos((13\*pi)/400)\*cos((13\*pi)/50000))/8, (25\*pi\*cos((7\*pi)/200)\*cos((7\*pi)/25000))/8, (25\*pi\*cos((3\*pi)/80)\*cos((3\*pi)/10000))/8, (25\*pi\*cos(pi/25)\*cos(pi/3125))/8, (25\*pi\*cos((17\*pi)/400)\*cos((17\*pi)/50000))/8, (25\*pi\*cos((9\*pi)/200)\*cos((9\*pi)/25000))/8, (25\*pi\*cos((19\*pi)/400)\*cos((19\*pi)/50000))/8, (25\*pi\*cos(pi/20)\*cos(pi/2500))/8, (25\*pi\*cos((21\*pi)/400)\*cos((21\*pi)/50000))/8, 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Output truncated. Text exceeds maximum line length for Command Window display.