**NAME: PRECIOUS AUGUSTINE NSA**

**DEPARTMENT: BIOMEDICAL ENGINEERING**

**MATRIC NUMBER: 17/ENG08/002**

**ENG 281 ASSIGNMENT**

commandwindow

clear

clc

close all

syms t

v=110\*cos(120\*pi\*t)

c=100\*10^-6

q=c\*v

t=0:0.01:0.35

ton=subs(q,t)

kins=subs(v,t)

i=diff(q)

moyo=subs(i,t)

power=i\*v

chuk=subs(power,t)

pt=double(chuk)

figure(1)

plot(t,kins,t,moyo,t,pt)

plot(t,kins,'blue',t,moyo,'red',t,pt,'black')

axis tight

grid on

grid minor

xlabel('time(secs)')

ylabel('variable')

legend('voltage(volts)','current(amperes)','power(watts)')

v =

110\*cos(120\*pi\*t)

c =

 1.0000e-04

q =

(11\*cos(120\*pi\*t))/1000

t =

 Columns 1 through 10

 0 0.0100 0.0200 0.0300 0.0400 0.0500 0.0600 0.0700 0.0800 0.0900

 Columns 11 through 20

 0.1000 0.1100 0.1200 0.1300 0.1400 0.1500 0.1600 0.1700 0.1800 0.1900

 Columns 21 through 30

 0.2000 0.2100 0.2200 0.2300 0.2400 0.2500 0.2600 0.2700 0.2800 0.2900

 Columns 31 through 36

 0.3000 0.3100 0.3200 0.3300 0.3400 0.3500

ton =

[ 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000, - (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, (11\*5^(1/2))/4000 - 11/4000, - (11\*5^(1/2))/4000 - 11/4000, 11/1000]

kins =

[ 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110, - (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, (55\*5^(1/2))/2 - 55/2, - (55\*5^(1/2))/2 - 55/2, 110]

i =

-(33\*pi\*sin(120\*pi\*t))/25

moyo =

[ 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0, (33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, -(33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, (33\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/100, -(33\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/100, 0]

power =

-(726\*pi\*cos(120\*pi\*t)\*sin(120\*pi\*t))/5

chuk =

[ 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, -(363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2))/10, (363\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2))/10, 0]

pt =

 Columns 1 through 10

 0 -216.9166 -134.0618 134.0618 216.9166 0 -216.9166 -134.0618 134.0618 216.9166

 Columns 11 through 20

 0 -216.9166 -134.0618 134.0618 216.9166 0 -216.9166 -134.0618 134.0618 216.9166

 Columns 21 through 30

 0 -216.9166 -134.0618 134.0618 216.9166 0 -216.9166 -134.0618 134.0618 216.9166

 Columns 31 through 36

 0 -216.9166 -134.0618 134.0618 216.9166 0

