commandwindow

clear

clc

syms t

v = 100\*cos(120\*pi\*t)

c = 100 \* 10^-6

t = 0:0.01:0.35

q = c\*v

i = diff(q)

p = i\*v

qn = subs(q)

qnn = double(qn)

vn = subs(v)

vnn = double(vn)

in = subs(i)

inn = double(in)

pn = subs(p)

pnn = double(pn)

plot(t,vnn)

hold on

plot(t,inn)

hold on

plot(t,pnn,'-black')

grid on

grid minor

legend('Voltage(V)','Current(A)','Power(W)')

xlabel('Time(sec)')

ylabel('Variable')

OUTPUT WINDOW BELOW

v =

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

c =

 1.0000e-04

t =

 Columns 1 through 12

 0 0.0100 0.0200 0.0300 0.0400 0.0500 0.0600 0.0700 0.0800 0.0900 0.1000 0.1100

 Columns 13 through 24

 0.1200 0.1300 0.1400 0.1500 0.1600 0.1700 0.1800 0.1900 0.2000 0.2100 0.2200 0.2300

 Columns 25 through 36

 0.2400 0.2500 0.2600 0.2700 0.2800 0.2900 0.3000 0.3100 0.3200 0.3300 0.3400 0.3500

q =

cos(120\*pi\*t)/100

i =

-(6\*pi\*sin(120\*pi\*t))/5

p =

-120\*pi\*cos(120\*pi\*t)\*sin(120\*pi\*t)

qn =

[ 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100, - 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, 5^(1/2)/400 - 1/400, - 5^(1/2)/400 - 1/400, 1/100]

qnn =

 Columns 1 through 12

 0.0100 -0.0081 0.0031 0.0031 -0.0081 0.0100 -0.0081 0.0031 0.0031 -0.0081 0.0100 -0.0081

 Columns 13 through 24

 0.0031 0.0031 -0.0081 0.0100 -0.0081 0.0031 0.0031 -0.0081 0.0100 -0.0081 0.0031 0.0031

 Columns 25 through 36

 -0.0081 0.0100 -0.0081 0.0031 0.0031 -0.0081 0.0100 -0.0081 0.0031 0.0031 -0.0081 0.0100

vn =

[ 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100, - 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, 25\*5^(1/2) - 25, - 25\*5^(1/2) - 25, 100]

vnn =

 Columns 1 through 12

 100.0000 -80.9017 30.9017 30.9017 -80.9017 100.0000 -80.9017 30.9017 30.9017 -80.9017 100.0000 -80.9017

 Columns 13 through 24

 30.9017 30.9017 -80.9017 100.0000 -80.9017 30.9017 30.9017 -80.9017 100.0000 -80.9017 30.9017 30.9017

 Columns 25 through 36

 -80.9017 100.0000 -80.9017 30.9017 30.9017 -80.9017 100.0000 -80.9017 30.9017 30.9017 -80.9017 100.0000

in =

[ 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0, (3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, -(3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, (3\*pi\*2^(1/2)\*(5^(1/2) + 5)^(1/2))/10, -(3\*2^(1/2)\*pi\*(5 - 5^(1/2))^(1/2))/10, 0]

inn =

 Columns 1 through 12

 0 2.2159 -3.5854 3.5854 -2.2159 0 2.2159 -3.5854 3.5854 -2.2159 0 2.2159

 Columns 13 through 24

 -3.5854 3.5854 -2.2159 0 2.2159 -3.5854 3.5854 -2.2159 0 2.2159 -3.5854 3.5854

 Columns 25 through 36

 -2.2159 0 2.2159 -3.5854 3.5854 -2.2159 0 2.2159 -3.5854 3.5854 -2.2159 0

pn =

[ 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0, -30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), -30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 - 1/4)\*(5^(1/2) + 5)^(1/2), 30\*2^(1/2)\*pi\*(5^(1/2)/4 + 1/4)\*(5 - 5^(1/2))^(1/2), 0]

pnn =

 Columns 1 through 12

 0 -179.2699 -110.7949 110.7949 179.2699 0 -179.2699 -110.7949 110.7949 179.2699 0 -179.2699

 Columns 13 through 24

 -110.7949 110.7949 179.2699 0 -179.2699 -110.7949 110.7949 179.2699 0 -179.2699 -110.7949 110.7949

 Columns 25 through 36

 179.2699 0 -179.2699 -110.7949 110.7949 179.2699 0 -179.2699 -110.7949 110.7949 179.2699 0

>>

GRAPH OURPUT BELOW

