

OBIKA PROMISE CHISOM

17/ENG02/058

COMPUTER ENGINEERING

(1)

```
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
Jay=subs(q,t)
Kay=subs(v,t)
i=diff(q)
Lure=subs(i,t)
power=i*v
lzu=subs(power,t)
pt=double(lzu)
plot(t,Kay,t,Lure,t,pt)
plot(t,Kay,'blue',t,Lure,'red',t,pt,'black')
axis tight
grid on
grid minor
xlabel('time(sec)')
ylabel('variable')
legend('voltage(volts)','current(amperes)','power(watts)')
```

OUTPUTS

v =

$110 \cos(120\pi t)$

c =

$1.0000e-04$

q =

$$(11 \cdot \cos(120 \cdot \pi \cdot t)) / 1000$$

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

Jay =

[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]

Kay =

[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

Lure =

[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

lzu =

[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 12

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

Columns 13 through 24

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

Columns 25 through 36

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

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