

```
1 - commandwindow
2 - clear
3 - clc
4 - close all
5 - A= [1 -2 -1 3; 2 3 0 1; 1 0 -4 -2; 0 -1 3 1]
6 - C= inv(A)
7 - B= [10; 8; 3; -7]
8 - T= C*B
9 - K= 273+ T
```

Command Window

```
-1.0000
 2.0000
-3.0000
 4.0000
```

K =

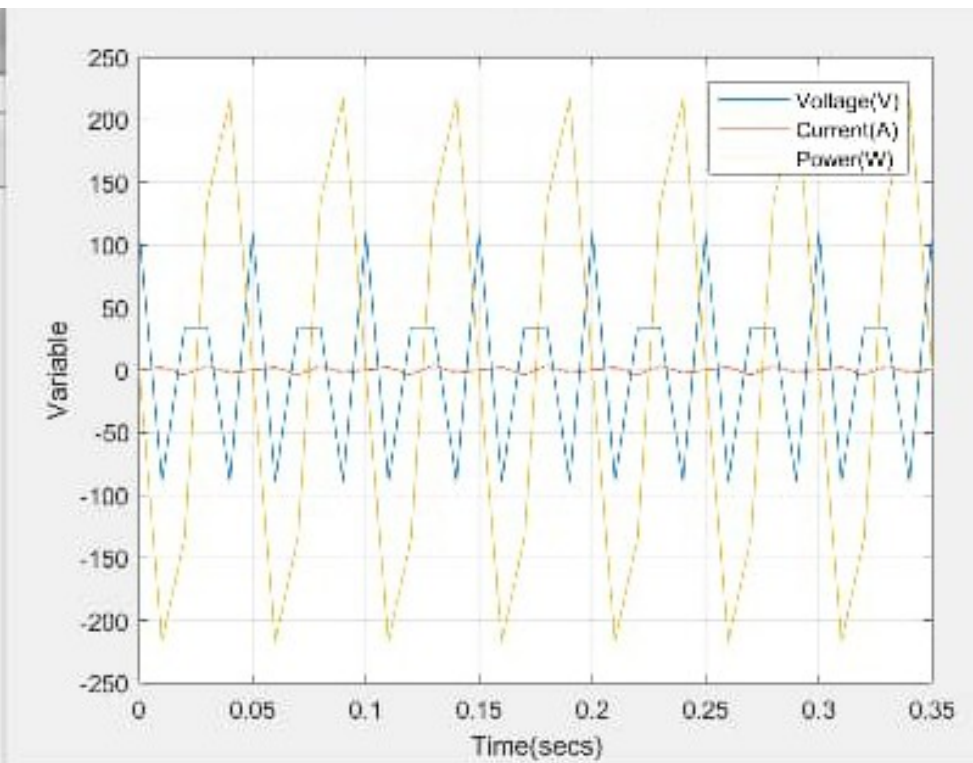
```
272
275
270
```

```
11 - v=110*cos(120*pi*t)
12 - I=110*0.012*pi*cos(120*pi*t+90)
13 - p=I*v
14 - t=[0:0.01:0.35]
15 - Vn=subs(v,t)
16 - In=subs(I,t)
17 - Pn=subs(p,t)
18 - plot(t,Vn,'blue',t,In,'r',t,Pn,'black')
19 - grid on
20 - grid minor
21 - xlabel('time (s)')
22 - ylabel('variable')
23 - legend('voltage (v)', 'current (A)', 'power (W)')
```

```
1 - commandwindow
2 - clear all
3 - clc
4 - A=[1 -2 -1 3; 2 3 0 1; 1 0 -4 -2; 0 -1 3 1]
5 - B=[10;8;3;-7]
6 - C=inv(A)
7 - D=C*B
8 - K=[273;273;273;273]
9 - T=D+K
10 - syms t
11 - v=110*cos(120*pi*t)
12 - I=110*0.012*pi*cos(120*pi*t+90)
13 - p=I*v
14 - t=[0:0.01:0.35]
15 - Vn=subs(v,t)
```

Command Window

```
1 clear
2 close all
3 syms t
4 V(t)=110*cos(120*pi*t)
5 C=100.*(10.^-6)
6 dv=diff(V)
7 T=C*dv
8 P=V(t)^2
9 Ln=[0:0.01:0.35]
10 Vn=subs(V,tn)
11 Tn=subs(T, Ln)
12 Pn=subs(P, tn)
13 plot(Ln, Vn, Ln, Tn, Ln, Pn)
14 xlabel('Time (secs)')
15 ylabel('Variable')
16 grid on
17 grid minor
18 legend('Voltage(V)', 'Current(A)', 'Power(W)')
```



Command Window

$$A := \begin{pmatrix} 1 & -2 & -1 & 3 \\ 2 & 3 & 0 & 1 \\ 1 & 0 & -4 & -2 \\ 0 & -1 & 3 & 1 \end{pmatrix}$$

$$B := \begin{pmatrix} 10 \\ 8 \\ 3 \\ -7 \end{pmatrix}$$

$$C := A^{-1} \cdot B$$

$$C = \begin{pmatrix} -1 \\ 2 \\ -3 \\ 4 \end{pmatrix}$$

$$K := \begin{pmatrix} 273 \\ 273 \\ 273 \\ 273 \end{pmatrix}$$

$$T := C + K$$

$$T = \begin{pmatrix} 272 \\ 275 \\ 270 \\ 277 \end{pmatrix}$$

$$t := 0..10$$

$$f(t) := 2 + 2t - 2 \cos\left(\pi \frac{t}{10}\right)$$

$$g(t) := 2 \sin\left(\pi \frac{t}{70}\right)$$

t =

0
1
2
3
4
5
6
7
8

f(t) =

0
2.098
4.382
6.824
9.382
12
14.618
17.176
19.618
21.902

g(t) =

0
0.09
0.179
0.268
0.357
0.445
0.532
0.618
0.703

