

QUESTION4b

$$A := \begin{pmatrix} 1 & -2 & -1 & 3 \\ 2 & 3 & 0 & 1 \\ 1 & 0 & -4 & -2 \\ 0 & -1 & 3 & 1 \end{pmatrix} \quad B := \begin{pmatrix} 10 \\ 8 \\ 3 \\ -7 \end{pmatrix}$$

$$A^{-1} = \begin{pmatrix} 0.027 & 0.24 & 0.493 & 0.667 \\ -0.093 & 0.16 & -0.227 & -0.333 \\ -0.107 & 0.04 & 0.027 & 0.333 \\ 0.227 & 0.04 & -0.307 & -0.333 \end{pmatrix} \quad T := A^{-1} \cdot B$$

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

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

$$Tk := Z + T$$

$$Tk = \begin{pmatrix} 275 \\ 270 \\ 270 \\ 277 \end{pmatrix}$$

$$Tk1 := 272$$

$$Tk2 := 275$$

$$Tk3 := 270$$

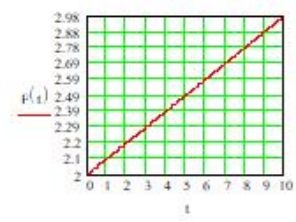
$$Tk4 := 277$$

QUESTION4d

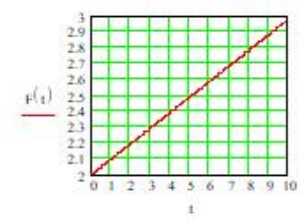
$$F(t) := 2 + 2t - 2 \cos\left(\frac{\pi}{10}\right)t$$

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

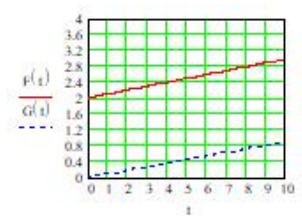
i > separately  
 $0 \leq t \leq 10$



ib



ii > together



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Details

Workspace

Name	Value
P	2536
Q	5688
S	657

Editor - C:\Users\olado\Documents\akapeaceQ4a.m

```
akapeaceQ4a.m
1 - P=2536
2 - Q=5688
3 - R=990
4 - S=657
5 - T=8907
6 - clear R
7 - clear T
8 - commandwindow
9 - clc
```

Command Window

```
f >>
```

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Workspace

Name	Value
C	100
I	1x1 sym
In	1x36 sym
P	1x1 sym
Pn	1x36 sym
t	1x36 double
V	1x1 sym
Vn	1x36 sym
xlabel	'time(sec)'
ylabel	'variable'

Editor - C:\Users\olado\Documents\MATLAB\akapeaceQ4c.m

```

1 - commandwindow
2 - clear
3 - clc
4 - close all
5 - syms t
6 - V = 110*cos(120*pi*t)
7 - C = 100
8 - P = 0.5*C*V^2
9 - I = P/V
10 - t = [0:0.01:0.35]
11 - Vn = subs(V,t)
12 - Pn = subs(P,t)
13 - In = subs(I,t)
14 - plot(t,Vn,t,Pn,t,In)
15 - xlabel('time(sec)')
16 - ylabel('variable')
17 - grid on
18 - grid minor
19 - legend('voltage(V)', 'current(I)', 'power(W)')
20 -

```

Command Window

```

ylabel =
    'variable'
fx >>
<

```

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Details

Workspace

Name	Value
A	4x4 double
B	[10;8;3;-7]
C	4x4 double
D	[-1.0000;2.0000;-3.000...
E	[273;273;273;273]
F	[272;275;270;277]

Editor - C:\Users\olado\Documents\MATLAB\akapeaceQ4b.m

```
akapeaceQ4a.m akapeaceQ4b.m +
1 - commandwindow
2 - clc
3 - clear
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 - E= [273; 273; 273; 273]
9 - F= D+E
10
11
12
13
14
15
```

Command Window

```
F =
    272
    275
    270
    277
>>
```