

```
MATLAB
Editor - C:\Users\BENNY\Documents\MATLAB\CATHERINETEST_02.m
CATHERINE01.m x CATHERINE02.m x CATHERINETEST_01.m x CATHERINETEST_02.m x +
1 - commandwindow
2 - clear all
3 - clc
4 - syms t
5 - t=[0,0.01:0.35]
6 - V=110*cos(120*pi*t)
7 - XC=1/120*pi*100*10^-6
8 - IM=110/XC
9 - I=IM*cos((120*pi*t)-90)
10 - P=I.*V
11 - Pn=subs(P)
12 - Vn=subs(V)
13 - In=subs(I)
14 - plot(t,Vn,'blue',t,In,'red',t,Pn,'black')
15 - grid on
16 - grid minor
17 - xlabel('time(s)')
18 - ylabel('variable')
19 - legend('Voltage (Vn)', 'Current (In)', 'Power (Pn)')
20
21
```

▶ MATLAB

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CATHERINE01.m ✕

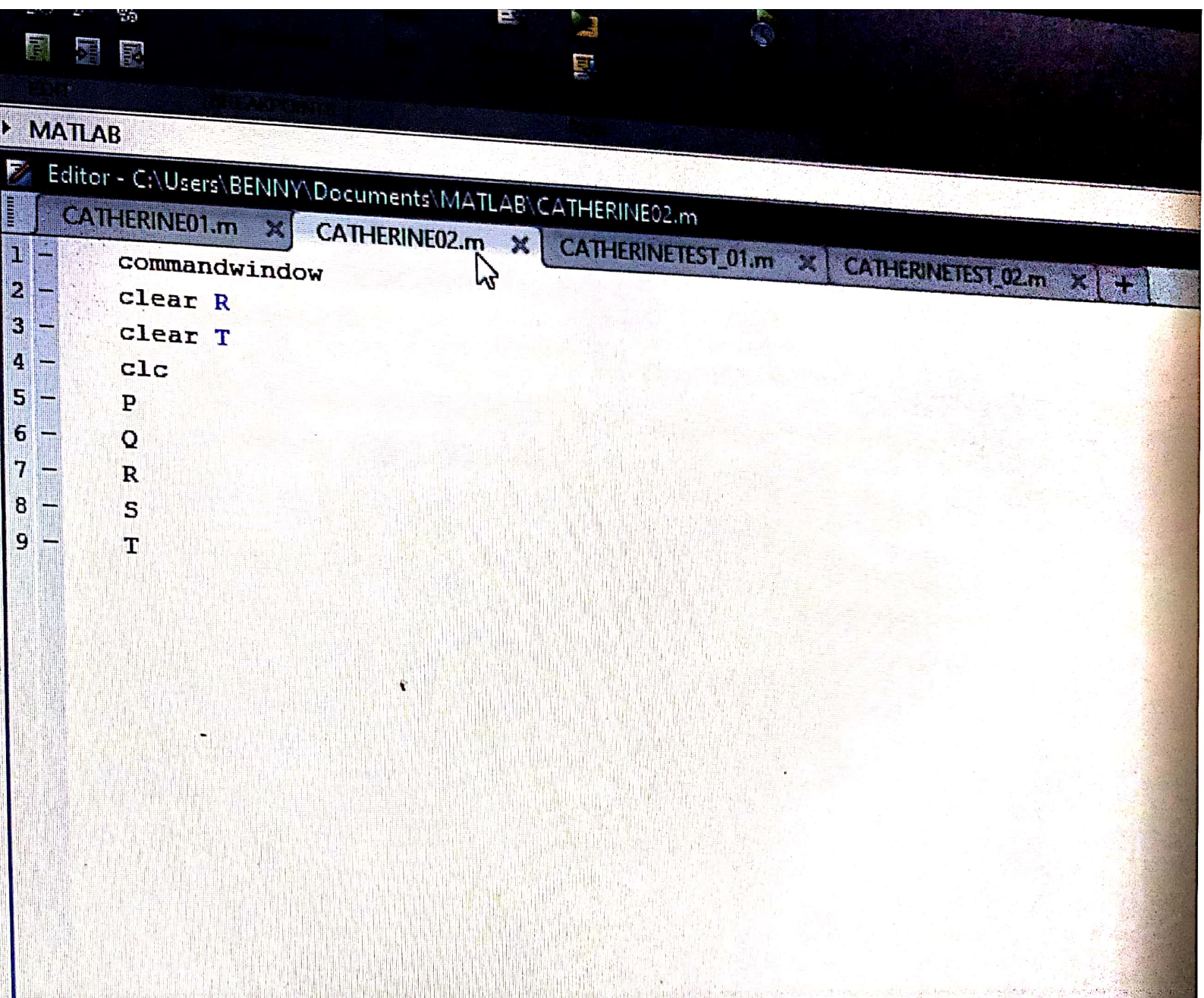
CATHERINE02.m ✕

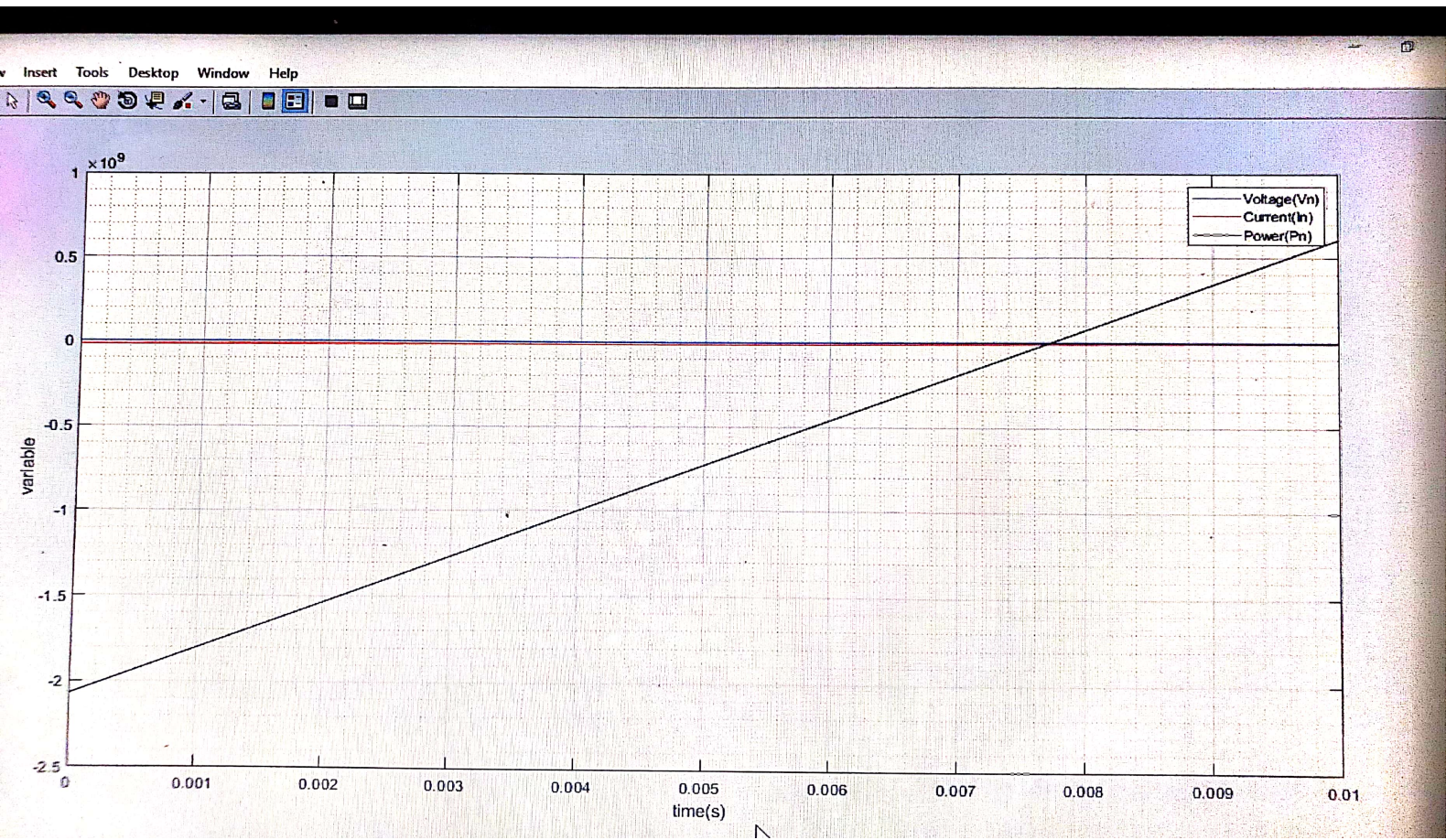
CATHERINETEST_01.m ✕

CATHERINETEST_02.m ✕

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```
1 - commandwindow
2 - clear all
3 - clc
4 - A=[1 2 1 0;-2 3 0 -1; -1 0 -4 3; 3 1 -2 1]
5 - B=[10;8 ;3; 7]
6 - P=inv(A)
7 - X=B.*P
```





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

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

$$C = A^{-1}$$

$$C = \begin{pmatrix} 0.027 & 0.24 & 0.493 & 0.667 \\ -0.093 & 0.16 & -0.227 & -0.333 \\ -0.107 & 0.04 & 0.027 & 0.333 \\ 0.227 & 0.04 & -0.307 & -0.333 \end{pmatrix}$$

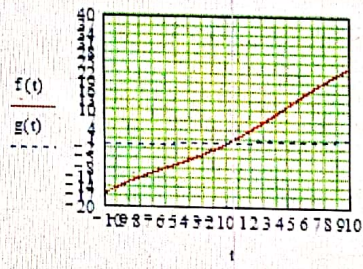
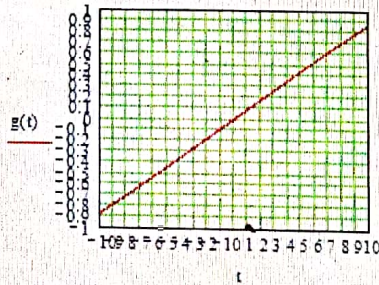
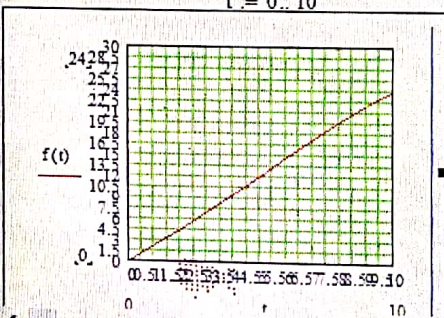
$$D = C \cdot B$$

$$D = \begin{pmatrix} 8.333 \\ -2.667 \\ 1.667 \\ -0.667 \end{pmatrix}$$

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

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

$$t = 0..10$$



Press F1 for help.