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COURSE: ENG 281

DEPARTMENT: MECHATRONICS

MATRIC NUMBER: 16/ENG05/023

SOURCE CODE

1. commandwindow
2. clear
3. clc
4. close all
5. syms t
6. $Q = 0.25 \cdot \sin(25 \cdot 3.142 \cdot t)$
7. $V = 0.5 \cdot \cos(0.2 \cdot 3.142 \cdot t)$
8. $I = Q/V$
9. $tn = [0:0.0001:0.35];$
10. $In = \text{subs}(I, tn);$
11. figure(1)
12. plot(tn, In)
13. xlabel('time')
14. ylabel('variable')
15. grid on
16. grid minor;
17. $P = I \cdot V$
18. $Pn = \text{subs}(P, tn)$
19. figure(2)

- 20. plot(tn, Pn)
- 21. xlabel('time')
- 22. ylabel('variable')
- 23. grid on
- 24. grid minor;
- 25. figure(3)
- 26. plot(tn, In)
- 27. title('combine plot')
- 28. hold on
- 29. plot(tn, Pn)
- 30. hold off;
- 31. xlabel('time')
- 32. ylabel('variable')
- 33. grid on
- 34. grid minor;

OUTPUT

The screenshot shows the MATLAB R2017a interface. The Command Window contains the following code and output:

```

Q =
sin((1571*t)/20)/4

V =
cos((1571*t)/2500)/2

I =
sin((1571*t)/20) / (2*cos((1571*t)/2500))

P =
sin((1571*t)/20)/4

Pn =
[ 0, sin(1571/200000)/4, sin(1571/100000)/4, sin(4713/200000)/4, sin(1571/50000)/4, sin(1571/40000)/4, sin(4713/100000)/4, sin(10997/200000)/4, sin(15
fx >> |
  
```

The Workspace panel on the left shows the following variables:

- I
- In
- P
- Pn
- Q
- t
- tn
- V

GRAPHS

