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Computer engineering

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Ques

1) Command window

2) clc

3) syms t

$$4) v(t) = 100 \sin(120 \pi t)$$

$$5) i = \text{diff}(v)$$

$$6) C = 100 \times 10^{-6}$$

$$7) I = \text{diff}(v) \cdot C$$

$$8) t = 0:0.01:0.55$$

$$9) Vn = \text{subs}(v)$$

$$10) Vnn = \text{double}(Vn)$$

$$11) In = \text{subs}(i)$$

$$12) Inn = \text{double}(In)$$

$$13) P = v \cdot i$$

$$14) Pn = \text{subs}(P)$$

$$15) Pnn = \text{double}(Pn)$$

$$16) \text{plot}(t, Vnn, 'b')$$

17) hold on

$$18) \text{plot}(t, Inn, 'r')$$

19) hold on

$$20) \text{plot}(t, Pnn, 'k')$$

$$21) \text{xlabel}('time (sec)')$$

$$22) \text{ylabel}('variable')$$

23) grid on

24) grid minor

$$25) \text{legend}('voltage (v)', 'current (A)', 'Power (W)')$$

$$I = \text{diff}(v)$$

$$i(t) = -3200 \pi \sin(120 \pi t)$$

$$P = v \cdot i$$

$$P = -1452000 \times \pi \sin(120 \pi t) \sin(120 \pi t)$$