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Mechatronics
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```
commandwindow
clear
clc
syms t
q= 0.25 * sin (25 * pi * t);
tn=[0:0.0001:0.35];
qn = subs(q,tn);
figure(1)
plot(tn, qn)
xlabel("Time(s)");
ylabel("Charge(Q)");
title("Charge against Time Graph");
grid on
grid minor

v = 0.5 * cos(0.2 * pi * t);
w = v * q;
wn = subs(w,tn);
figure(2)
plot(tn, wn)
xlabel("Time(s)");
ylabel("Work(J)");
title("Work against Time Graph");
grid on
grid minor

figure(3)
plot( tn, wn,tn, qn)
xlabel("Time(s)");
ylabel("Charge(Q) & Work(J)");
title("Charge&Work against Time Graph");
grid on
grid minor
legend("Power (W) ", "Current (A) ");
```



