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**ASSIGNMENT 5 CODES AND OUTPUT**

**Input:**

```
commandwindow
clear
clc
close all
syms t
Q(t)=0.25*sin(25*pi*t)
V(t)=0.5*cos(0.2*pi*t)
I=diff(Q)
P=I*V
tn=[0:0.0001:0.35];
In=subs(I,tn);
Pn=subs(P,tn);
plot(tn,In,tn,Pn)
xlabel('Time(s)')
ylabel('Variable')
grid on
grid minor
legend('Power (P)', 'Current (A)')
axis tight
```

**Output:**

Q(t) =

$\sin(25\pi t)/4$

$$V(t) =$$

$$\cos((\pi t)/5)/2$$

$$I(t) =$$

$$(25\pi \cos(25\pi t))/4$$

$$P(t) =$$

$$(25\pi \cos((\pi t)/5) \cos(25\pi t))/8$$