

```
commandwindow
clear
clc
close all
%Number 1
Y= dsolve('D2y+5*Dy+6*y= cos(t)', 'Dy(0)=5', 'y(0)=3')
pretty(Y)
syms t
t= (0:0.1:50);
y= subs(Y,t);
[t',y'];
figure
plot(t,y);
grid on
grid minor
%Number 2
syms u v
E1 = 'Du + 3*v= exp(-2*t) '
E2 = 'Dv - 3*u = exp(2*t) '
cond1= 'u(0)= 30'
cond2= 'v(0) = 30'
[U,V]= dsolve(E1,E2,cond1,cond2)
pretty(U)
pretty(V)
t= (0:0.1:5);
U1= subs(U,t);
V1= subs (V,t);
[t',U1',V1'];
figure
plot(t,U1,t,V1)
grid on
grid minor

%Number 3
syms V L R
i = dsolve('L*DI +R*I =V', 'I(0)=0')
pretty(i)
%Number 4
syms k a w t
F= k*exp(-a*t)*cos(w*t)
laplace(F)

%Number 5
syms s n
S= n/(s^2 + 10*n*s + 24*n^2)
ilaplace(S)
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