```
(*Solve the boundary value differntial equation :x''[t]+w^2x[t]=0,
where boundary conditions are x[0]=1,x[T/4]=0,T=2pi/w*)
(*Solution*)
w = 1; T = 2 Pi / w;
deq = x''[t] + w^2 x[t] == 0;
xt = DSolve[deq, x[t], t];
xt = x[t] /. xt[[1]]
aeq1 = (xt /. t -> 0) == 1;
aeq2 = (xt /. t -> T / 4) == 0;
const = Solve[{aeq1, aeq2}, {C[1], C[2]}];
xt = xt /. const[[1]]
vt = D[xt, t]
at = D[xt, {t, 2}]
Plot[{xt, vt, at}, {t, 0, 10}]

w = 1; T = 2 Pi / w;
deq = x''[t] + w^2 x[t] == 0;
sol = DSolve[{deq, x[0] == 1, x[T / 4] == 0}, x, t]
DSolve[{deq, x[0] == 1, x[T / 4] == 0}, x[t], t]

? DSolve
```

DSolve[*eqn*, *y*, *x*] solves a differential equation for the function *y*, with independent variable *x*.

DSolve[{*eqn*₁, *eqn*₂, …}, {*y*₁, *y*₂, …}, *x*] solves a list of differential equations.

DSolve[*eqn*, *y*, {*x*₁, *x*₂, …}] solves a partial differential equation. ≫