

4a: command window

```
close all
```

```
clear
```

```
clc
```

```
syms n(t)
```

```
eqn = diff(n,t,2) - diff(n,t) - 12*n == 144*t^3 + 12.5;
```

```
dn = diff(n,t)
```

```
cond = [t(0)==0, n(0)==5, dn == -0.5];
```

```
xsol = dsolve(eqn, cond)
```

ü $t = [0.01:1.5]$

```
bing = sub(xsol, t)
```

```
plot(t, bing)
```

4b: command window

```
close all
```

```
clear
```

```
clc
```

`syms y(t) x(t).`

`ODE1 = diff(y,t) - 2*x == exp(-2*t)`

`ODE2 = diff(x,t) + y == exp(-t)`

`ODES = (ODE1, ODE2)`

`ysol = dsolve(ODES)`

`cond1 = (x == 0)`

`cond2 = (y == 0)`

`cond = (cond1, cond2)`

`xsol = dsolve(ODES, cond)`

`(xsol, ysol) = dsolve(ODES, cond)`

`xsol(t) = xsol`

`ysol(t) = ysol`

`fplot(xsol)`

`hold on`

`fplot(ysol)`

`grid on`