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DEPT: MECHATRONIC ENGINEERING

MATNO: 17/ENG05/041

Question 4.

Ⓜ Command window

close all

clear

clc

syms n(t), t

ode = diff(n, t, 2) == diff(n, t) = 144 * t^3 + 12

Dn = diff(A, t)

ysol = dsol(ode)

Cond 1 = (n == 5)

Cond 2 = (n == -0.5)

Cond = (Cond 1; Cond 2)

ysol = dsol(ode, Cond)

t = 0 : 0.1 : 1.5

tn = subs(ysol, t)

plot(tn, t)

Ⓜ

Command

Command window

close all

clear

clc

Syms y x t

ODE 1 = diff(y,t) - 2*x = exp(-2t);

ODE 2 = diff(x,t) + y = exp(-t);

ODES = (ODE1, ODE2);

Ysol = dsolve(ODES)

Cond 1 = (x == 0)

Cond 2 = (y == 0)

Cond = (Cond1, Cond2)

Ysol = dsolve(ODES, Cond)

i) $(X_{sol}t, Y_{sol}t) = \text{dsolve}(\text{ODE}, \text{Cond})$

ii) $X_{sol}(t) = X_{sol}t$

$Y_{sol}(t) = Y_{sol}t$

fplot(Xsol t)

hold on

fplot(Ysol t)

axis on

grid on.