

Bature Moses Theek

17/ENG03/012

ENG381

a Command Window

clc

clear

clear all

Syms n (t)

eqn = diff (n, t, 2) - diff (n, t) - (2 * n == 144 * (t * 5) +

12.5 :

Cond = n(0) == 15 , diff (n, t, 2) == -0.5

t = 0 : 0.1 : 1.5

~~Theek~~ = subs (ysol)

plot (Dion)

grid on

legend (Dion ; 'location ; 'best')

b Command Window

clc

clear

close

Syms x (t) y (t)

eqns = diff (y, t) - x' * x == exp (.1 * x * t)

eqns = diff (x, t) + y - (x * y) :

eqns = [eqn1 ; eqn2]

$$\text{Cond} = x(0) == 0, y(0) == 0;$$

$$\text{Ans} = \text{dsolve}(\text{eqn}, \text{cond})$$

$$x_{\text{sol}}(t) = \text{Ans} * x$$

$$y_{\text{sol}}(t) = \text{Ans} * y$$

Visualising the solution on graph separately continue with

fplot(xsol)

fplot(ysol)

grid on

legend('xsol', 'location', 'best')

legend('ysol', 'location', 'best')

Together,

fplot(xsol)

hold on

fplot(ysol)

grid on

legend('xsol', 'ysol', 'location', 'best')

i Command window
clc
clear
clear all

syms t s w r k a
 $x = k * \exp(-a * t) + \sin(6 * s * w * t) + \cos(3 * a * t)$
F = laplace(x, t, s)
simplify(F)
pretty(ans)

ii Command window
clc
clear
close all

syms t s
 $f = \pi * / ((s^2) + 15 * \pi * s + 24 + \pi * 3)$
i Laplace(f)
Simplify(ans)
pretty(ans)

(i) Solve the dynamic linked...

b)

