

Ohpala Chukwuenneke 17/Eng02/069  
Computer Engineering

2a Command Window

clc

close all

Syms n (t)

D = diff (n)

ode = (diff (n, t, 2)) - (diff (n, t)) - (2\*n) ==  
144\*t^3 + 12.5;

Cond1 = D (0) == -0.5;

Cond2 = n (0) == 5;

Conds = [Cond1 Cond2];

dsol (t) = dsolve (ode, Conds);

dsol = simplify (dsol (t))

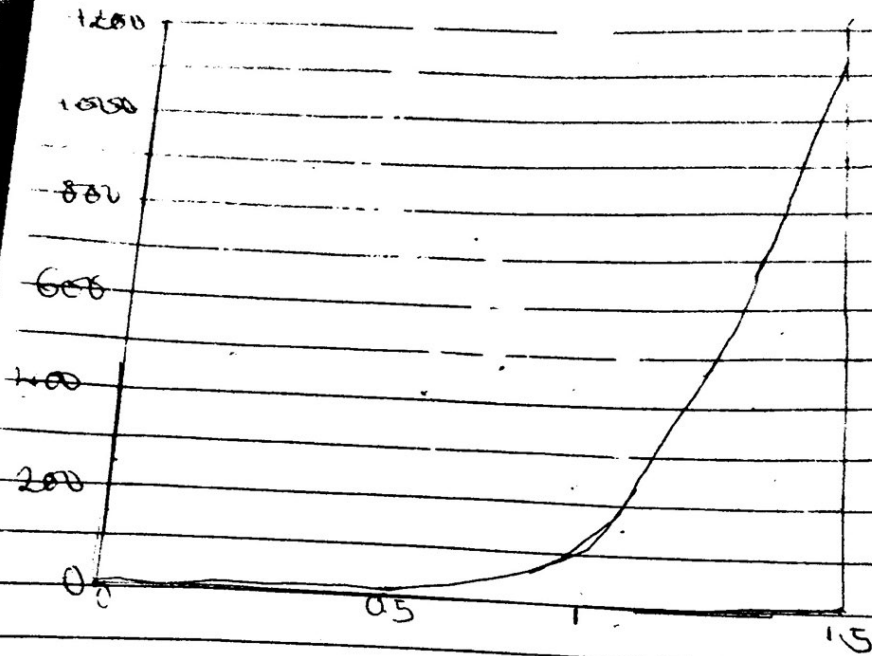
tn = [0:0.1:1.5]

femmy = subs (dsol, tn)

plot (tn, femmy)

grid on.

legend ('emmy C'emmy', 'location: best')



\*) \* Comm  
 \* clec  
 cle  
 Sys  
 $F = \frac{2}{s}$   
 lap  
 s

4b.) (

2c). Command window  
 clear  
 clc

Syms t s w

$$x = k \cdot \exp(-a \cdot t) * s (s * w * t) * \cos(3 \cdot w \cdot t)$$

$$F = \text{laplace}(x, t, s)$$

Simplify (F)

Pretty (ans)



ii) \* Command window

\* clear

clc

Syms t s

$F = \frac{\pi *}{(s^2 + 1s * p. * s + 2 * (p.^3))}$

laplace (F)

Simplify (ans)

pretty (ans)

4b) Command window

clc

clear

close

Syms x(t) y(t)

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

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

equ 3 = [equ 1    equ 2]

cond = x(0) == 0, y(0) == 0;

Ans = solve (eqns, cond)

x sol (t) = Ans x

y sol (t) = Ans y



ii) visualizing the solution on graph separately  
continue continue with

f plot (x sol)

f plot (y sol)

grid on

Emeka ('x sol', 'location', 'best')

Emeka ('y sol', 'location', 'best')

visualizing the solution on graph  
together continue with

f plot (x sol)

hold on

f plot (y sol)

grid on

Emeka ('x sol', 'y sol', 'location', 'best')