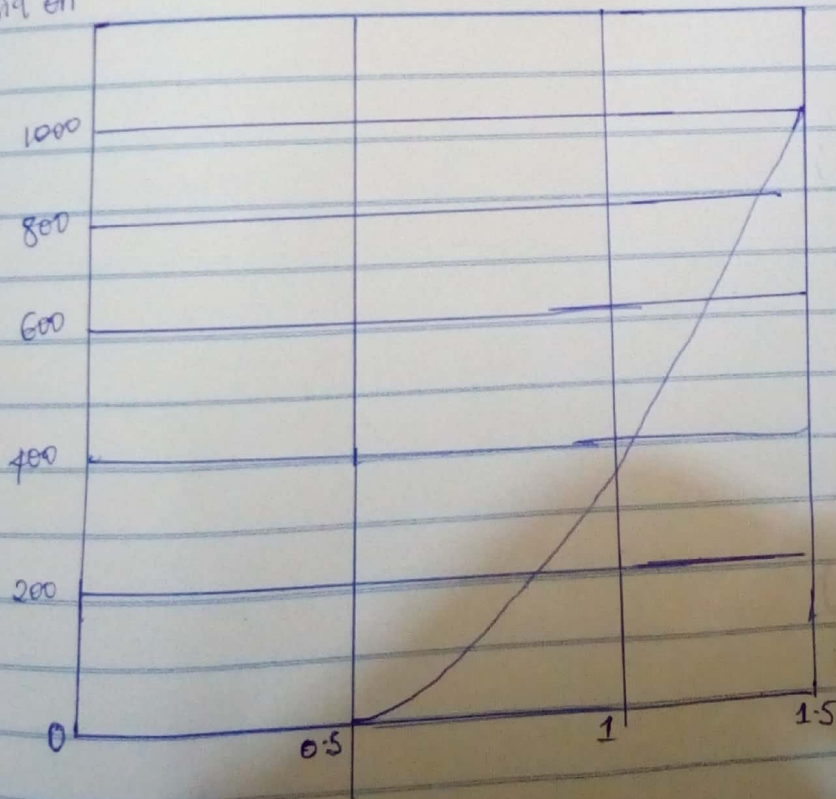


IBINAYE DANIEL · T. 17/SC17/018 CIVIL ENGR

40) Command window

```
clear
clc
close all
syms n(t)
s = diff(n)
eq = (diff(s, t, 2) - diff(n, t) - (R*n)) == 144 * t^3 + 12.5
cond1 = D(0) == 0.5;
cond2 = n(0) == 5;
conds = [cond1 cond2];
dsol = simplify(dsolve(conds));
tn = [0:0.1:1.5];
J = subs(dsol, tn);
plot(tn, J)
grid on
```



© Command window

```
clear
clc
syms f(s) s
J = (3.142) / ((s^2) + 15 * 3.142 * s + 24 * (3.142^3))
```

$$f(t) = k e^{-at} \sin(\omega t) \cos(\omega t)$$

Command window

clear

clc

Syms f(t) k w t a

$$z = k * \exp(-a * t) * \sin(\omega * w * t) * \cos(\omega * w * t)$$

lplace(z)

96 Command window

clear

clc

close all

Syms y(t) y x(t)

Dy = diff(y,t)

Dx = diff(x,t)

$$\text{equ1} = Dy == \exp(-2*t) + 2*x$$

$$\text{equ2} = Dx == \exp(-1*t) - y$$

ode = [equ1; equ2]

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

Ans = dsolve(ode, cond)

x\_sol(t) = Ans.x

y\_sol(t) = Ans.y

fplot(x\_sol)

fplot(y\_sol)

grid on

Legend('x\_sol', 'Location', 'best')

Legend('y\_sol', 'Location', 'best')

fplot(x\_sol)

hold on

fplot(y\_sol)

grid on