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Meats Assignment IV.

Q

4c) Command window

clear all

clc

syms t k a w

$$P_t = k * \exp(-a * t) * \sin(3 * w * t) * \cos(3 * w * t)$$

$$P_s = \text{laplace}(P_t)$$

For $F(s) \rightarrow t$ -domain

Command window

clear all

clc

Syms s

$$P_s = P_t / ((s^2) + (15 * P_t * s) + 24 * (P_t^3))$$

$$P_t = \text{ilaplace}(P_s)$$

a) - Command window

- clear all

- clc

- Syms n(t)

- ~~Rita~~ dn = diff(n, t)

- Rita = diff(n, t, 2) - diff(n, t) - 12 * n = 44 * (t^3) + 12.5.

- Chidum = [n(0) = 5, dn(0) = -0.5]

- Rita = dsolve(Rita, Chidum).

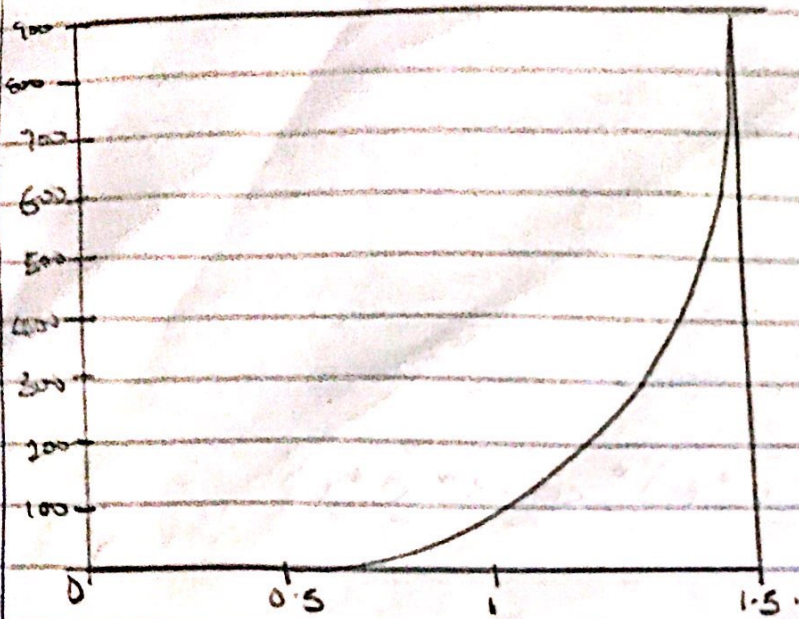
- tn = 0:0.1:1.5

- Baby = subs(Rita, tn)

- Plot(tn, Baby)

- Grid on

- grid minor
- axis tight



4/5 - Command window

- Clear all

- Clc

- Syms y(t) x(t)

- rita = diff(y,t) - 2*x - z*exp(-2*t)

- ritaa = diff(x,t) + y - z*exp(-t)

- ritaaa = [rita, ritaa]

- baby = [y(0) == 0, x(0) == z0]

- [yeg, xeg] = dsolve(ritaaa, baby)

- Rfigure1

- Rplot(yeg)

- gnd on

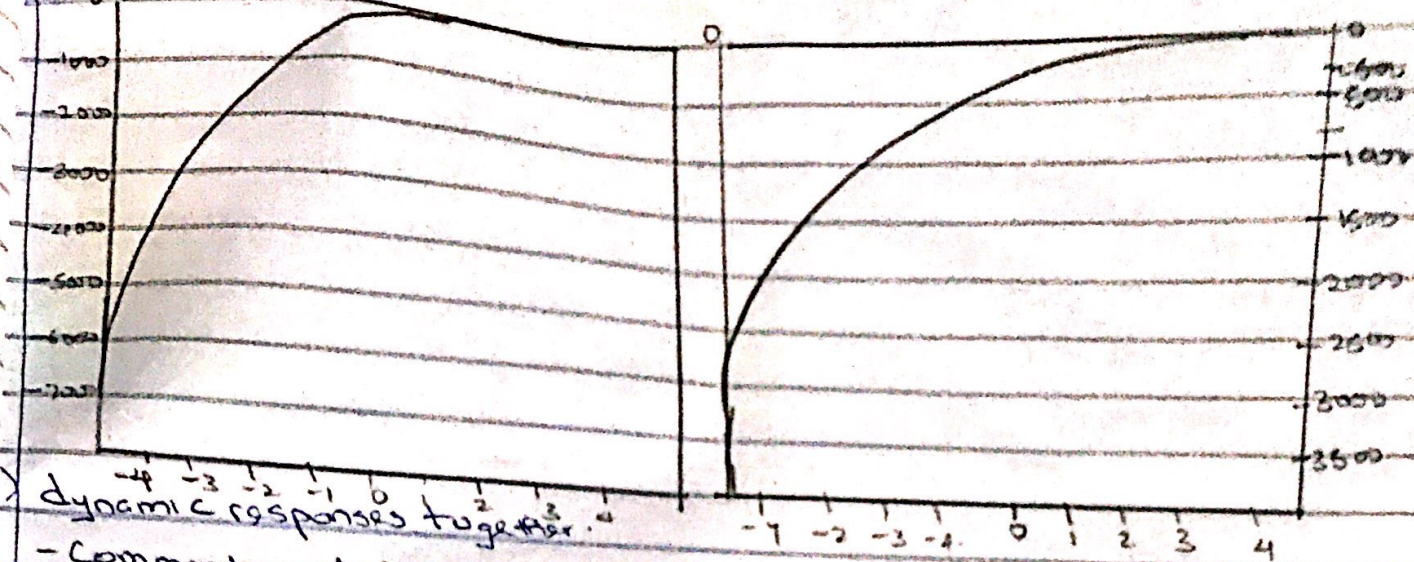
- grid minor

- figure 2

- Rplot(xeg)

- gnd on

- grid minor



dynamic responses together

- Command window
- Clear
- Clc
- Syms y(t) x(t)
- nta = diff(y,t) - 2*x = exp(-2*t)
- ntaa = diff(x,t) + y = exp(-t)
- ntaaa = [nta, ntaa]
- baby = [y(0) = 0, x(0) = 0]
- [yeg, xeg] = dsolve(ntaaa, baby)
- Pplot(yeg)
- ~~gnd on~~ hold on
- ~~gnd minor~~ P plot(xeg)
- ~~gnd on~~
- ~~gnd minor~~

