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16/ENG05/017

MECHATRONICS

ENG 281 TEST

3a. commandwindow

clear

clc

close all

A=[0 1 2 1; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]

B=[-4;2;6;4]

x=A^-1\*B

output

A =

0 1 2 1

-3 -17 1 2

1 1 1 0

8 -34 16 -10

B =

-4

2

6

4

x =

12.7500

-1.7500

-5.0000

7.7500

b. commandwindow

clear

clc

close all

syms t

d=1.5\*exp(-0.75\*t)\*sin(0.85\*t)+0.375\*t

tn=[0;0.01;-2.5]

v=diff(d)

vn=subs(v,tn)

figure (1)

plot(vn,tn)

xlabel 'time(min)'

ylabel 'velocity(km/hr)'

grid on grid minor

a= diff(v)

an=subs(a,tn)

figure (2)

plot(an,tn)

xlabel 'acceleration(km/hr^2)'

ylabel 'time(min)'

grid on

grid minor

axis tight

legend('distance(km)', 'velocity(km/hour)')

c. commandwindow

clear

clc

close all

syms x

y=5\*sin^5(5\*x)

inty=int(y)

i=int(y,0,180)