Mid-Semseter Test

A.

commandwindow

clear

clc

close all

A=[0 10 4 -2;-3 -17 1 2;1 1 1 0;8 -34 16 -10]

Inverse=inv(A)

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

X=Inverse\*B

w=X(1,1)

x=X(2,1)

y=X(3,1)

z=X(4,1)

w=4     x=0    y=2    z=6

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

dn=subs(d,tn)

figure(1)

plot(tn,dn)

xlabel('time(min)')

ylabel('distance(m)')

grid on

grid minor

axis tight

v=diff(d)

vn=subs(v,tn)

figure(2)

plot(tn,vn)

xlabel('time(min)')

ylabel('velocity(m/min)')

grid on

grid minor

axis tight

a=diff(v)

an=subs(a,tn)

figure(3)

plot(tn,an)

xlabel('time(min)')

ylabel('acceleration(m/min^2)')

grid on

grid minor

axis tight

figure(4)

plot(tn,vn,tn,an)

xlabel('time(min)')

ylabel('Variable')

legend('velocity(m/min)','acceleration(m/min^2)','location','best')

grid on

grid minor

axis tight

C.

commandwindow

clear

clc

syms x

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

Y=y^2

ZY=int(Y)\*pi

dint=int(ZY,0,pi)

Volume=double(dint)

format long g

Volume =

          95.3806362724067