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%% Question 1

commandwindow
clear
clc
close all
A = [0 10 4 -2; -3 -17 1 2; 1 1 1 0; 8 -34 16 -10]
B = [-4; 2; 6; 4]
C = inv(A)
format bank
D = C*B

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%% question 2

commandwindow
clear
clc
close all
syms t
t=[0:0.01:2.5]
d =1.5*exp(-0.75*t)*sin(0.85*t)+0.375*t
V= diff(d)
V=subs(V,t)
a=diff(V)
a=subs(a,t)
figure (1)
plot(t,V,t,a)
xlabel('t (munites)')
ylabel('variable')
legend V=velocity-time
legend a=acceleration-time
grid on
grid minor

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%% question 3

commandwindow
clear
clc
close all
syms x
y = 5*(sin(5*x))^5
x = [0 : 3.142]
format rat
A = int(y)
B = subs(A,x)

```