NAME : OGUNDOLA DAMILOLA OLAMIDE

DEPARTMENT: CHEMICAL ENGINEERING

MATRIC NUMBER: 17/ENG01/022

ENG 382 (ENGINEERING MATHEMATICS V)

commandwindow

clearvars

clc

format short g

syms t kp td tp

v = kp\*(1-exp(-((t-td)/tp)));

dami = xlsread(' 1587203818odevbesdata', 'data1');

t1 = dami(:,1);

v = dami(:,2);

V1 = round(mdata(900,2),1)

t0 = ones(length(v),1)

t = [t0 t1]

[mcoeff, mcoeffint, mresid, mresidint, manova] = regress(v,t);

% mcoeff

% rsquaredvalue=mcoeff(1)

plot(t,v);

xlabel('Time (min)')

ylabel('Volume (m^3)')

grid on

legend('Experimental','Linearized')



%non-linear

ig=[0.1,0.1,0.1,0.1];

modelfun=@(v,t) ig(1)\*(1-exp(-((ig(2)-ig(3))/ig\*4))));

femi=nlinfit(t1,v,ig,modelfun)

figure(2)

plot(t1,v)

hold on

plot(t1,femi)

grid on

grid minor

xlabel('Time(min)')

ylabel('Volume(m^3)')

legend('Experimental','Nonlinear')