PHIILP LYDIA

PETROLEUM ENGINEERING

17/ENG07/019

ENG 382 ASSIGNMENT IV

FUNCTION FILE

function dqdt=lydodefun(t,q)

dqdt(1)=(-0.03)\*q(1)+(0.005)\*q(2)+1;

dqdt(2)=(0.03)\*q(1)-(0.018)\*q(2)+(0.0075)\*q(3);

dqdt(3)=(0.013)\*q(2)-(0.0325)\*q(3);

dqdt=dqdt';

SIMULATION FILE

commandwindow

clear

clc

close all

[t,q]=ode45('lydodefun',[0:45:1200],[0 0 0]);

figure(1)

subplot(3,1,1)

plot(t,q(:,1),'o-g')

xlabel('Time(min)')

ylabel('Volume (Litre)')

legend('Tank 1')

grid on

subplot(3,1,2)

plot(t,q(:,2),'\*-b')

xlabel('Time(min)')

ylabel('Volume (Litre)')

legend('Tank 2')

grid on

subplot(3,1,3)

plot(t,q(:,3),'+-r')

xlabel('Time(min)')

ylabel('Volume (Litre)')

legend('Tank 3')

grid on