commandwindow

clear

clc

close all

[t,Q]=ode45('ofeoilfun',[0 1200],[0 0 0]);

table = table(t,Q)

subplot(3,1,1)

plot(t,Q(:,1),'green-o')

xlabel('Time (min)')

ylabel('Volume (litre)')

legend('Tank')

grid on

grid minor

subplot(3,1,2)

plot(t,Q(:,2),'blue-\*')

xlabel('Time (min)')

ylabel('Volume (litre)')

legend('Tank')

grid on

grid minor

subplot(3,1,3)

plot(t,Q(:,3),'red-+')

xlabel('Time (min)\*')

ylabel('Volume (litre)')

legend('Tank')

grid on

grid minor

function f = ofeoilfun(t,Q)

f(1)= (-(15/500)\*Q(1))+((5/1000)\*Q(2))+1

f(2)=((15/500)\*Q(1))-((18/1000)\*Q(2))+((3/400)\*Q(3));

f(3)=(((13/1000)\*Q(2))-((13/400)\*Q(3)));

f=f';



table =

 117×2 table

 t Q

 \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 0 0 0 0

 5.0238e-05 5.0238e-05 3.7857e-11 8.2414e-18

 0.00010048 0.00010048 1.5143e-10 6.5931e-17

 0.00015071 0.00015071 3.4072e-10 2.2252e-16

 0.00020095 0.00020095 6.0572e-10 5.2745e-16

 0.00045214 0.00045214 3.0664e-09 6.008e-15

 0.00070333 0.00070332 7.42e-09 2.2614e-14

 0.00095452 0.0009545 1.3666e-08 5.6527e-14

 0.0012057 0.0012057 2.1805e-08 1.1393e-13

 0.0024616 0.0024616 9.0892e-08 9.6955e-13

 0.0037176 0.0037174 2.073e-07 3.3394e-12

 0.0049735 0.0049732 3.7101e-07 7.9959e-12

 0.0062295 0.0062289 5.8204e-07 1.5711e-11

 0.012509 0.012507 2.3467e-06 1.272e-10

 0.018789 0.018784 5.2938e-06 4.3098e-10

 0.025069 0.025059 9.4228e-06 1.0235e-09

 0.031348 0.031334 1.4733e-05 2.0012e-09

 0.062747 0.062688 5.8998e-05 1.6038e-08

 0.094146 0.094013 0.00013275 5.4136e-08

 0.12554 0.12531 0.00023595 1.2829e-07

 0.15694 0.15657 0.00036854 2.5048e-07

 0.31394 0.31246 0.0014709 1.9985e-06

 0.47093 0.46762 0.0033017 6.7247e-06

 0.62792 0.62205 0.0058552 1.5891e-05

 0.78491 0.77576 0.0091262 3.0941e-05

 1.5225 1.4883 0.033936 0.00022264

 2.2601 2.1854 0.073913 0.00071735

 2.9977 2.8675 0.12852 0.0016489

 3.7352 3.5348 0.19725 0.0031434

 4.6599 4.3512 0.30258 0.0059928

 5.5846 5.1458 0.42836 0.010128

 6.5093 5.9193 0.57366 0.015746

 7.434 6.6723 0.7376 0.023031

 8.8487 7.7862 1.0226 0.037777

 10.263 8.8559 1.3463 0.057336

 11.678 9.8835 1.706 0.08216

 13.093 10.871 2.0992 0.11264

 15.095 12.204 2.7082 0.1661

 17.097 13.465 3.3731 0.23225

 19.1 14.66 4.0879 0.31162

 21.102 15.792 4.8473 0.40458

 23.818 17.235 5.94 0.55283

 26.535 18.58 7.0945 0.72656

 29.251 19.835 8.301 0.92548

 31.968 21.008 9.5507 1.1491

 35.571 22.449 11.261 1.4828

 39.174 23.772 13.018 1.8562

 42.777 24.989 14.808 2.2667

 46.381 26.113 16.619 2.7114

 51.138 27.469 19.026 3.3463

 55.896 28.699 21.434 4.0282

 60.654 29.817 23.83 4.7497

 65.412 30.84 26.201 5.5044

 71.808 32.086 29.331 6.5609

 78.205 33.204 32.383 7.6511

 84.602 34.213 35.348 8.7617

 90.998 35.13 38.216 9.8826

 100.04 36.3 42.088 11.467

 109.08 37.34 45.753 13.031

 118.11 38.269 49.216 14.559

 127.15 39.111 52.476 16.039

 138.59 40.075 56.311 17.832

 150.03 40.937 59.85 19.524

 161.47 41.708 63.116 21.114

 172.91 42.406 66.121 22.599

 187.45 43.209 69.588 24.333

 201.99 43.92 72.705 25.908

 216.54 44.549 75.509 27.337

 231.08 45.112 78.025 28.626

 249.21 45.736 80.799 30.053

 267.35 46.278 83.225 31.304

 285.48 46.748 85.347 32.4

 303.61 47.158 87.201 33.36

 329.93 47.672 89.471 34.551

 356.26 48.091 91.344 35.525

 382.58 48.422 92.899 36.308

 408.91 48.697 94.173 36.958

 426.78 48.865 94.889 37.349

 444.66 49.009 95.521 37.686

 462.53 49.13 96.086 37.965

 480.4 49.236 96.579 38.212

 498.28 49.334 97 38.443

 516.15 49.419 97.372 38.641

 534.02 49.49 97.703 38.806

 551.9 49.552 97.992 38.951

 573.51 49.622 98.284 39.116

 595.12 49.679 98.536 39.252

 616.73 49.724 98.761 39.354

 638.34 49.763 98.95 39.443

 661.99 49.809 99.102 39.559

 685.64 49.843 99.239 39.641

 709.29 49.86 99.383 39.669

 732.94 49.876 99.497 39.702

 753.94 49.907 99.54 39.788

 774.93 49.926 99.593 39.838

 795.93 49.925 99.68 39.821

 816.93 49.927 99.748 39.817

 834.2 49.944 99.759 39.867

 851.47 49.955 99.778 39.897

 868.74 49.956 99.815 39.895

 886.01 49.958 99.845 39.896

 902.68 49.966 99.855 39.92

 919.35 49.972 99.868 39.935

 936.01 49.974 99.887 39.938

 952.68 49.976 99.903 39.941

 972.37 49.981 99.911 39.957

 992.05 49.985 99.921 39.966

 1011.7 49.985 99.936 39.965

 1031.4 49.986 99.948 39.965

 1054.7 49.993 99.945 39.986

 1078.1 49.996 99.949 39.995

 1101.4 49.991 99.97 39.978

 1124.7 49.989 99.983 39.969

 1143.6 49.995 99.974 39.989

 1162.4 49.998 99.972 39.998

 1181.2 49.995 99.984 39.987

 1200 49.993 99.992 39.98