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';

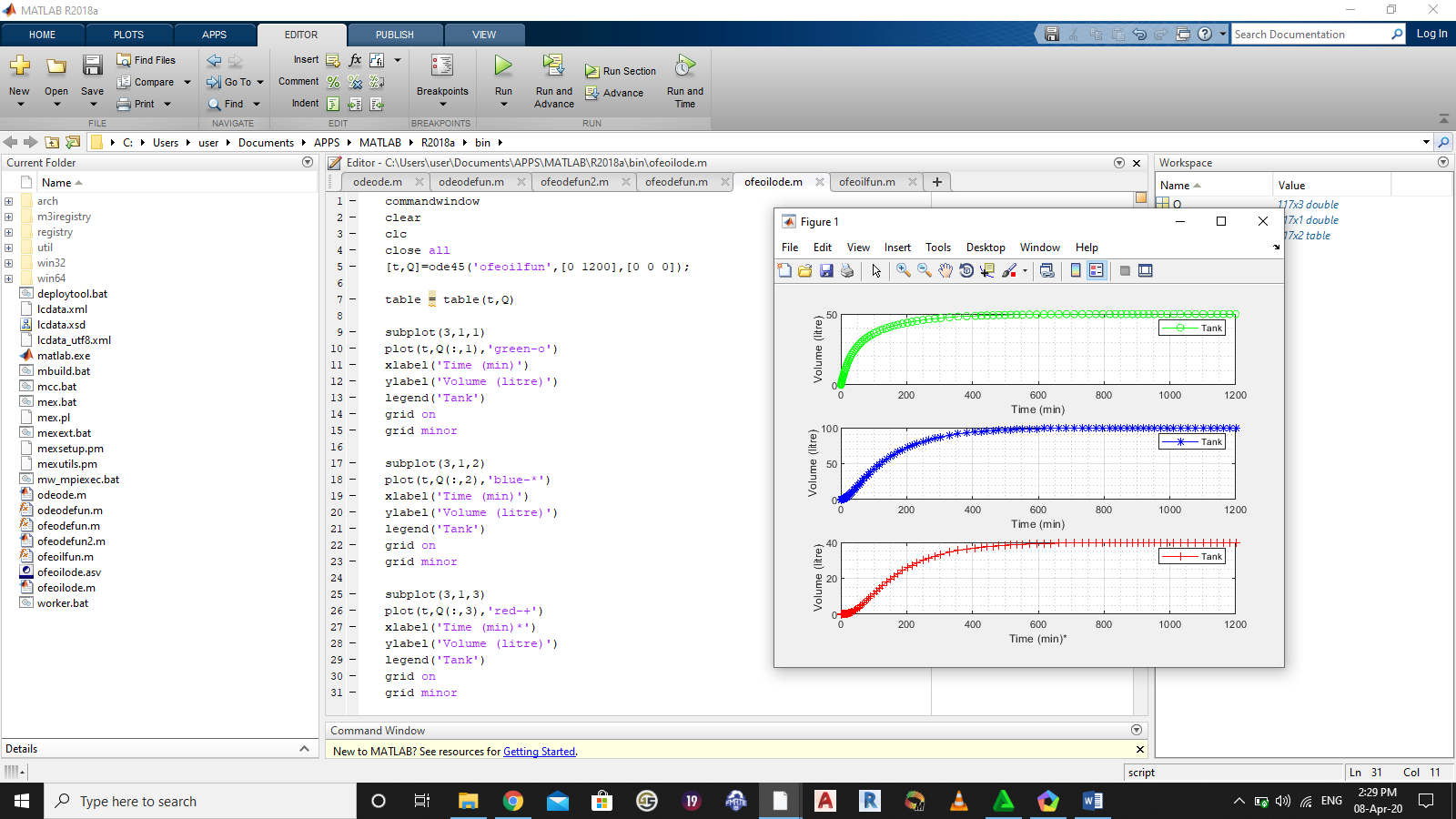


table =

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