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17/eng09/008
C

(5, 1, 2) 10/10/08
(1, 1, 1) 10/10/08
(1, 1, 1) 10/10/08
(1, 1, 1) 10/10/08
(1, 1, 1) 10/10/08

Answer

function file

function dydt = bottfun(t, y)

dydt(1) = (-15/500 * y(1)) + (5/1000 * y(2)) + 1;

dydt(2) = (15/500 * y(1)) - (18/1000 * y(2)) + (3/400 * y(3));

dydt(3) = (18/1000 * y(2)) - (13/400 * y(3));

dydt = dydt';

Simulation file

Command window

clear

clc

close all

[t, y] = ode45('bottfun', [0:45:1200], [0 0 0]);

figure(1)

subplot(3, 1, 1)

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

xlabel('Time (min)')

ylabel('Volume (litre)')

legend('Tank 1')

grid on

subplot(3, 1, 2)

plot(t, y(:, 2), '-b')

xlabel('Time (min)')

ylabel('Volume (litre)')

legend('Tank 2')

grid on


```
subplot(3,1,3)
```

```
plot(t, y(:,1), 'r-')
```

```
xlabel('time (min)')
```

```
ylabel('volume (litre)')
```

```
legend('iron')
```

```
grid on
```