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17/ENG03/089
CIVIL ENGINEERING

ANSWERS

Function file

```
function dydt = otafun(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) = (13/1000*y(2)) - (13/400*y(3));
dydt = dydt;
```

Simulation file

```
Command window
clear
clc
close all
[t, y] = ode45('otafun', [0:45:1200], [0,0,0]);

figure(1)
subplot(3,1,1)
plot(t, y(:,1), 'o-g')
xlabel('Time (min)')
ylabel('volume (litres)')
legend('Tank1')
grid on
subplot(3,1,2)
plot(t, y(:,2), '--b')
xlabel('Time (min)')
ylabel('volume (litres)')
legend('Tank 2')
grid on
subplot(3,1,3)
plot(t, y(:,1), '--r')
xlabel('Time (mins)')
ylabel('volume (litres)')
legend('Tank3')
grid on
```