

**OKAFOR MARTINS CHINONSO**

**16/ENG07/018**

**PETROLEUM ENGINEERING**

**ENG 382**

**ASSIGNMENT 5**

**Question 1 ii**

```
1. function eulermethod
2. t0 = 0;
3. tn = 0.5;
4. h = 0.1;
5. y0 = 1.4;
6. t = t0:h:tn; y(1)= y0;
7. n = length(t); %exact solution
8. for i = 1:n-1
9.     dy = 2*t(i)+(y(i))^2 ;
10.     y(i+1)=y(i)+ h*dy; %numerical solution
11. end
12. [t' y']
13. plot(t,y,'*-')
14. ylabel('Response')
15. xlabel('Time(hour) ')
16. grid on
17. grid minor
18. legend('Dynamic Response(y) ')
```

**commandwindow**

>> eulermethod

ans =

0	1.4000
0.1000	1.5960
0.2000	1.8707
0.3000	2.2607
0.4000	2.8317
0.5000	3.7136

