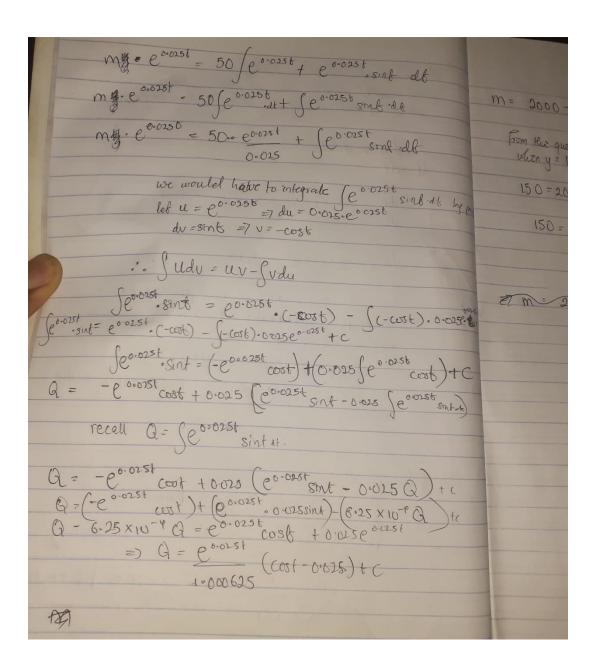
## QUADRI JOHN OBAJUWON

## ELECT-ELECT

## 18/ENG04/070

| VAlues D  |
|---|
| Volume of water on tank = 1200 gal-   |
|   |
| amount of salt in water at any instance is m  |
|   |
| dy = dm = rate in - rate out<br>at dt   |
| at at   |
| din - sacri   |
| din = 50 gal · (1+sint)16 - ml6 · 30 gal  min nin   |
| wy.   |
| din = 50 (1+8/16) - 30m   |
| dt dt   |
| 30gal = 2.5% of 1200011 = 0.025   |
| dm/dt = 50(1+sint) - 0.025.m  |
| separating this variable, we have,  |
| dm/dt + 0.025m = 50 (1+5mt)   |
| a) =>: dm + 0.025m = 50(1+snb) = the  |
| dt  |
| differential equ.   |
| 12 0  |
| 5) Solving the equ worning  |
| dy t Py = Q => dm = Pm = Q  |
| dre at  |
| IF=OSP.dt = eS0.025db.  |
| 2 01/25 \$  |
| $ \overline{IF} = \underbrace{0.025t}_{*} \Rightarrow y.\overline{IF} = \underbrace{fg.\overline{IF}dt}_{*} $ $ \frac{1}{2} = \underbrace{0.025t}_{*} = \underbrace{fg.\overline{IF}dt}_{*} $ $ \frac{1}{2} = \underbrace{0.025t}_{*} = \underbrace{fg.\overline{IF}dt}_{*} $ |
| : m. e. o. o. o = (50 (1+8mt). e. o. o. o. db   |
| J   |
|   |



```
m = 2000 - 50

1.000625

From the quextun;

when y = 150, to =0

150 = 2000 - 50

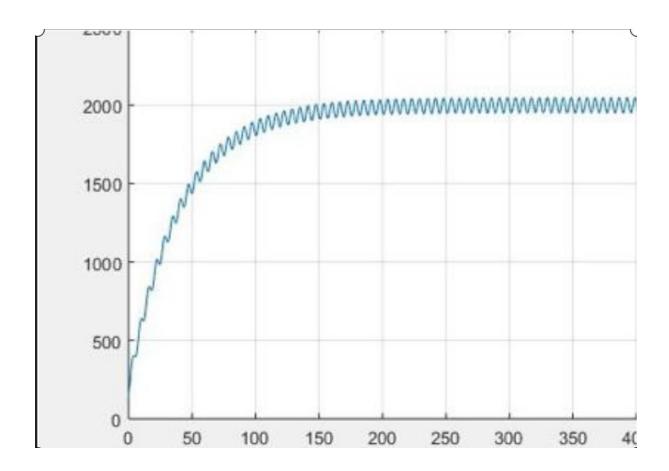
1.000625

150 = 2000 - 49.9688 + 500

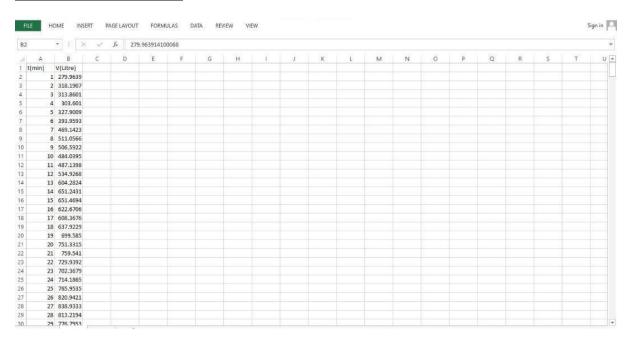
500 = -860.0312

0 = -36.0006
```

sdfgb



## **ANSWER TO NUMBER TWO**



```
1 -
       commandwindow
2 -
       clear
3 -
       clc
4 -
       close all
5 -
       syms t
6 -
       values=[]
7 -
       t=1:1:500
8 -
       mean=1000-((exp(-0.05*t))*800)
9 -
       y=1000+(50/1.0025)*sin(t)+(2.5/1.0025)*cos(t)-((exp(-0.05*t))*802.4
10
11 -
       if rem(t,2) ==0
12 -
           values [values, mean]
13 -
       else
14 -
           values=[values,y]
15 -
       end
16 -
       excelvalues=transpose (values)
17 -
       mins=transpose(t)
18 -
       plot(t, values)
19 -
       grid on
20 -
       grid minor
21 -
       xlabel ('time(mins)')
22 -
       ylabel('volume(litres)')
23 -
       xlswrite('odevbesdata.xlsx',{'t(min)'},'veriler','Al')
24 -
       xlswrite('odevbesdata.xlsx',mins,'veriler','A2')
25 -
       xlswrite('odevbesdata.xlsx',{'V(Litre)'},'veriler','Bl')
26 -
       xlswrite('odevbesdata.xlsx',excelvalues,'veriler','B2')
27
```

