

DAKTOP WENGR

18/ENG01/008

ENGINEERING MATHS

~~ENGINEER~~

$$1) \frac{dT}{dt} = k(T-25)$$

$$\frac{dT}{(T-25)} = k dt$$

$$\ln(T-25) = kt + C$$

$$T-25 = e^{kt+C}$$

$$T = T_0 e^{kt}$$

$$T = T_0 e^{kt} + 25$$

At $t=0$

$$10 = ~~T_0~~ T_0 + 25$$

$$10 - 25 = T_0$$

$$T_0 = -15$$

$$T = -15e^{kt} + 25$$

$$20 = -15e^{kt} + 25$$

$$\underline{-5 = -15e^{kt}}$$

$$\underline{-15} \quad \underline{-15}$$

$$0.33 = e^{k5}$$

$$-1.09 = k5$$

$$k = -0.219$$

$$T = -15e^{-0.219t} + 25$$

```
commandwindow
clear
clc
close all
format short g
mdata=xlsread('onlinequizdata','fluiddata')
x=mdata(1:2:250,1)
y=mdata(1:2:250,2)
plot(x,y)
grid on
grid minor
```

I

Command Window

86
88
90
92
94
96
98
100
102

script

Ln 11 Col 11