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18/ENG01/025

$$1) \quad YB \quad \frac{dT}{dt} = L(T-25)$$

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

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

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

$$T-25 = e^{kt} \times e^c$$

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

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

$$\text{At } t=0$$

$$10 = T_0 + 25$$

$$10 - 25 = T_0$$

$$T_0 = -15$$

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

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

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

$$-15$$

$$0.33 = e^{kt}$$

$$-1.09 = k \times 5$$

$$k = -0.219$$

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

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yimaquiz2.m x +
- 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

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88
88
90
92
94
96
98
100
102

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