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

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

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

$$T-25 = 4^{kt+C}$$

$$T = 70 \cdot 4^{kt}$$

$$T = 70 \cdot 4^{kt} + 25$$

At $t=0$

$$10 = 70 + 25$$

$$10 - 25 = 70$$

$$70 = -15$$

$$70 = -154^{kt} + 25$$

$$20 = -154^{kt} + 25$$

$$\frac{-5}{-15} = \frac{-154^{kt}}{-15}$$

$$0.33 = 0.4^{kt}$$

$$-1.09 = kt$$

$$k = 0.219$$

$$T = -154^{-0.219t} + 25$$

$$T = 20.9 \text{ at } t=?$$

$$20.9 = 35e^{0.05t} - 25$$

$$49.9 = 35e^{0.05t}$$

$$e^{0.05t} = 49.9/35$$

$$e^{0.05t} = \ln(1.426)$$

$$0.05t = 0.356$$

$$t = 7.12 \text{ minutes}$$

yimaquiz2.m

```
- 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

Figure 1

File Edit View Insert Tools Desktop Window Help

