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

$$\frac{dT}{T-25} = K\,dt$$

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

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

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

$$T = T_0 e^{KT} + 25.$$

At $t = 0$

$$10 = T_0 + 25$$

$$10 - 25 = T_0$$

$$T_0 = -15$$

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

$$20^\circ = -15e^{K5} + 25$$

$$\frac{-5}{-15} = \frac{-15e^{K5}}{-15}$$

$$0.33 = e^{K5}$$

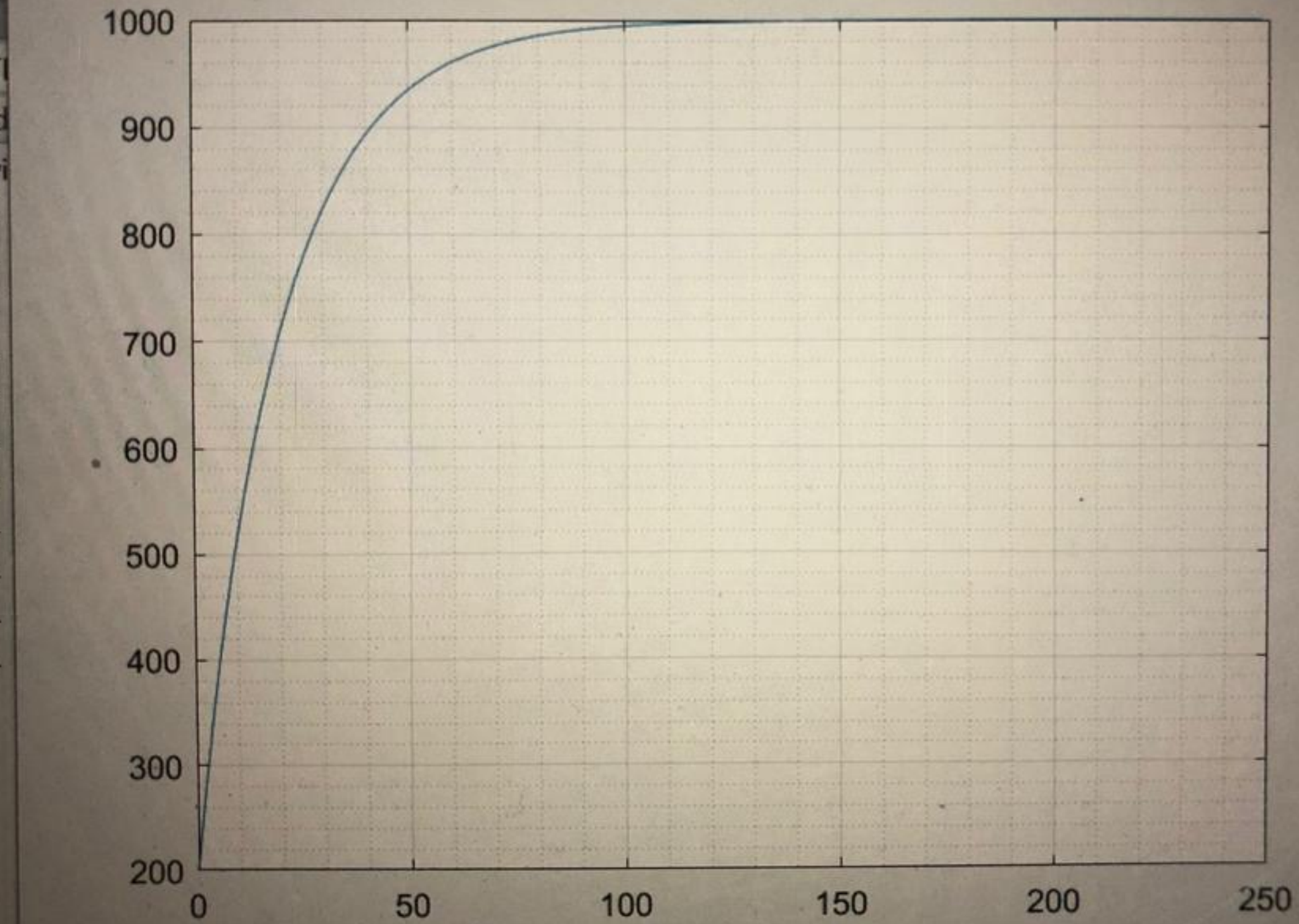
$$-1.09 = K5$$

$$K = -0.219$$

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

Figure 1

File Edit View Insert Tools Desktop Window Help



```
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
```

Command Window

```
    86
    88
    90
    92
    94
    96
    98
   100
   102
```

script Ln 11 Col 11