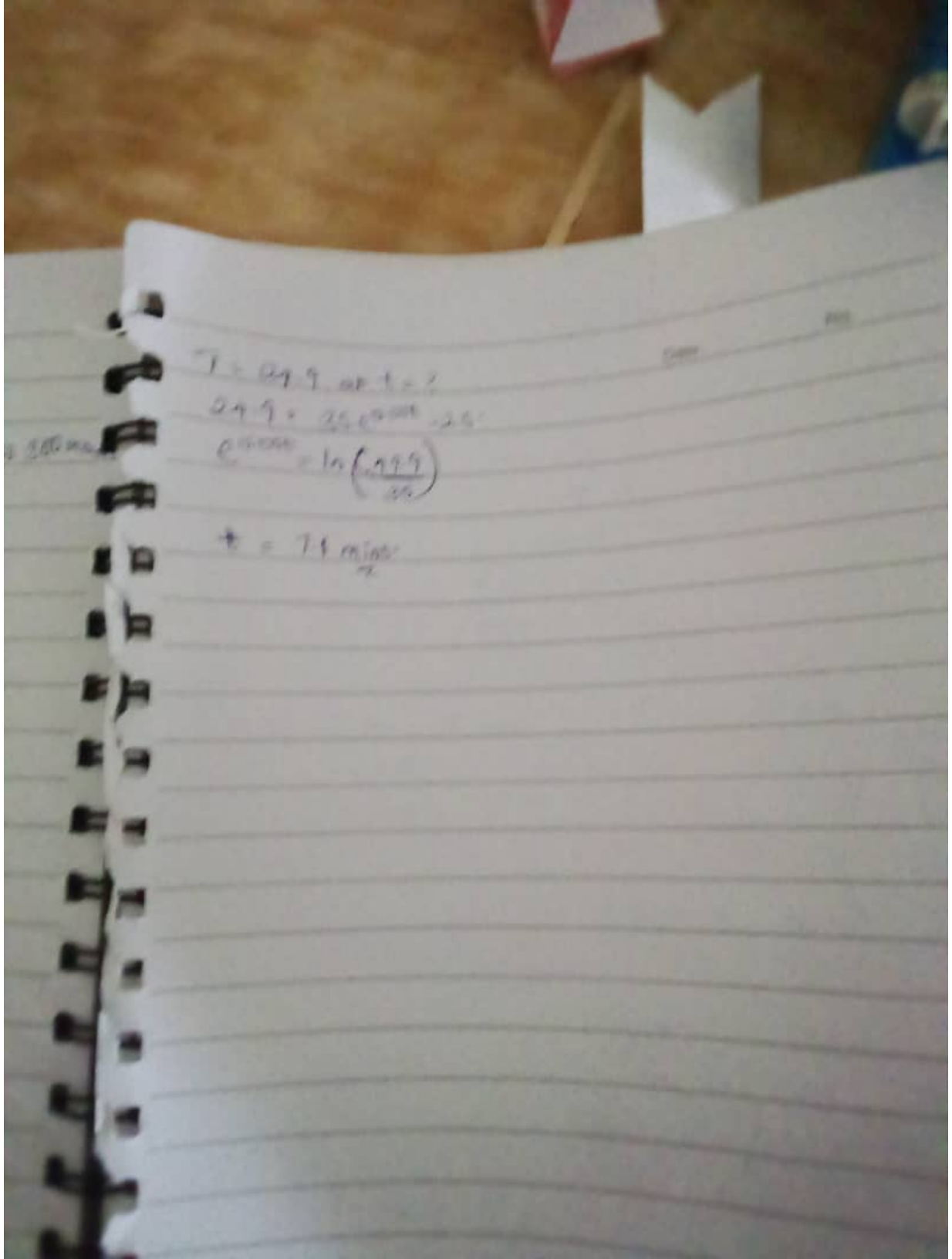


Initial velocity = 10°c

Second " = 20°c at 5mins which is 300 secs

$\frac{dT}{dt} \propto (T - T_A)$

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

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

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

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

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

$T - 25 = e^{tk} \cdot e^{c}$

$T - 25 = Ae^{tk}$

$T = 25 = e^{kT}$

$T = 35e^{tk} - 25$

$10 = Ae^{0} - 25$ at $T = 10°C$

$T = 20°C$

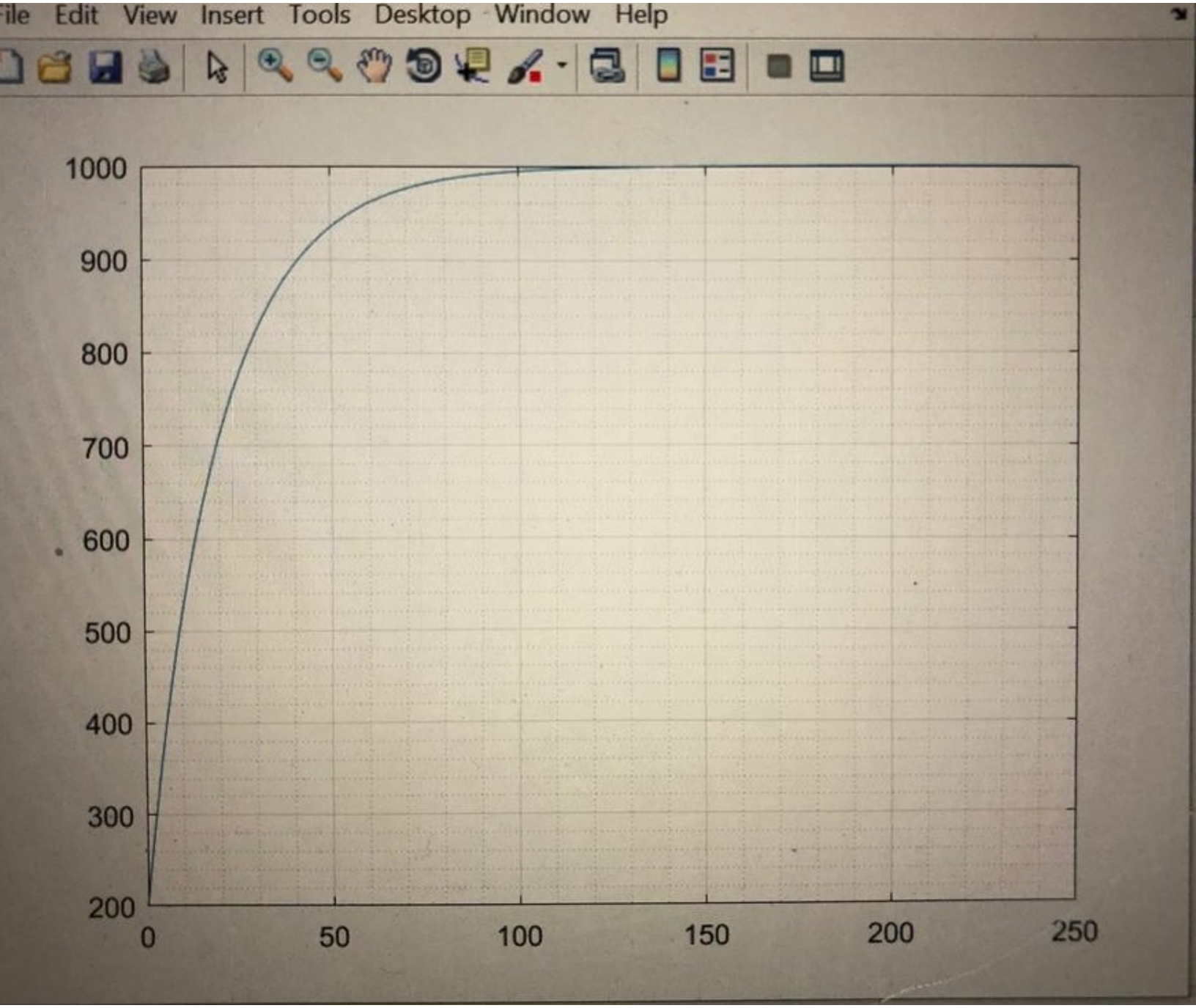
$20 + 35e^{5k} - 25$

$45 = 35e^{5k}$

$e^{5k} = \ln\frac{45}{35}$

$K = \frac{0.25}{5} = 0.05$

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


File Edit View Insert Tools Desktop Window Help
1000
900
800
700
600
500
400
300
200
0
50
100
150
200
250

```
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
```

mand Window

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