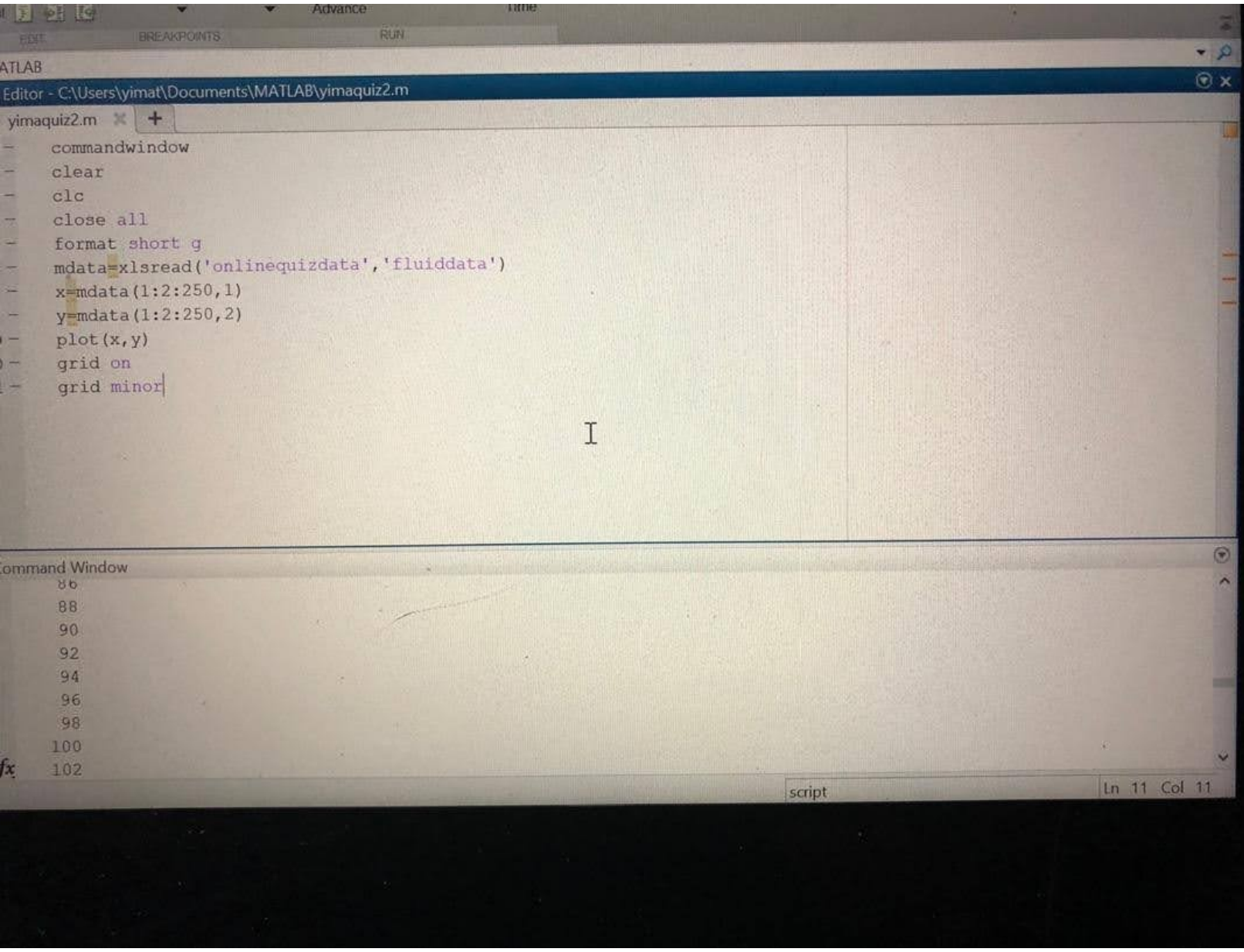
Advance
EDIT
BREAKPOINTS
RUN
ATLAB
Editor - C:\Users\yimat\Documents\MATLAB\yimaquiz2.m
yimaquiz2.m
commandwindow
clear
clc
close all
format short g
mdata=xlsread('onlinequizdata','fluiddata')
x=mdata(1:2:250,1)
y=mdata(1:2:250,2)
plot(x,y)
grid on
grid minor
Command Window
86
88
90
92
94
96
98
100
102
script
Ln 11 Col 11

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

$T-25 = Ae^{kt}$

$T = Ae^{kt} - 25$

$t=0$, $T=10^{\circ}C$ at mutal

$10 = Ae^{0} - 25$

$A = 35$

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

$t = 5$ mins

$T = 20^{\circ}C$

$20^{\circ}C = 35e^{5k} - 25$

$45 = 35e^{5k}$

$e^{5k} = 45/35$

$5k = \ln(0.251)$

$k = \frac{0.25}{5}$

$k = 0.05$

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

$T = 24.9$ substitute

$24.9 = 35e^{0.05t} - 25$

$49.9 = 35e^{0.05t}$

$e^{0.05t} = \ln(1.43)$

$0.05t = 0.36$

$t = 7.2$ minutes

Akoh Jesse Godwin
18/ENG03/013
Civil Engineering

1) $T_i = 10^\circ C$

$T = 20^\circ C$ @ 5mins

$T_{actual} = 25^\circ C$

T_A = Actual Temp

$dt/dt \propto (T - T_A)$

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

collecting similar terms

$\frac{dt}{25} = K dt$

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

$T - 25 = e^{tK} \cdot e^{C}$

$T - 25 = Ae^{tK}$

$T = Ae^{tK} - 25$

mutual

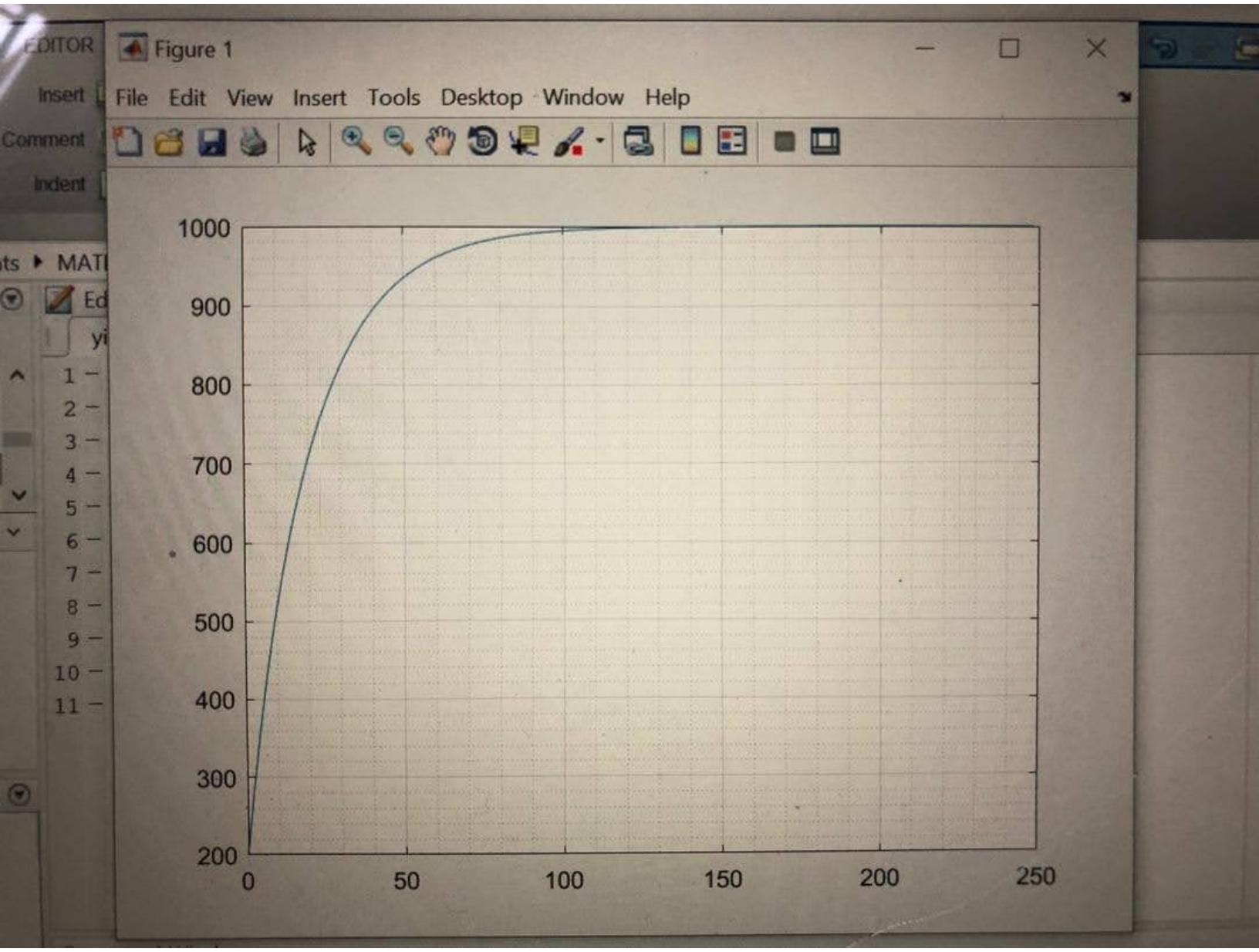
Figure 1
File Edit View Insert Tools Desktop Window Help
1000
900
800
700
600
500
400
300
200
0
50
100
150
200
250