

14/03/2020

T Watt Erhebung 2020

181 Eng 04/080

Electrical / Electronics

ENG 382

Engineering mathematics

Assignment

MATLAB

- Command window

clear

clc

format long g

V = 0.5

for i = 1:100

iter(i+1) = i;

$V(i+1) = 500 + ((500 + (\log(V(i))))^3) +$

$\dots (34.3 + (0.020)) = V(2) 10.3$

$ea(i+1) = \text{abs}((V(i+1) - V(i) / V(i+1)))$
100;

if $ea(i+1) < = 1E-11$

break

end

end

iter 'V' ea']

plot [V, iter]

axis tight

grid an
grid minor.

iter	V	f_g
0	0.5	0
1	239.05	99.791
2	294.17	18.736
3	302.16	2.7895
4	303.85	0.4099
5	304.04	0.0602
6	304.06	0.00882
7	304.07	0.00113
8	304.07	0.0013
9	304.07	$0.9635e^{-12}$

@ iter 7 $V = 304.07$

$$1. \quad T_d = \frac{0.3V^2}{500 + (\ln V)^3} = 0.02 \checkmark$$

$$\begin{aligned} & V = 304.07 \\ & = \frac{0.3 (304.07)^2}{500 + (\ln 304.07)^3} = 0.02 (304.07) \\ & = 34.25, \dots \end{aligned}$$

$$\approx 34.3$$