14/03/20 Jagun Seyi O. Elect/Elect
Ass' 17/ENG04/035

1) Command Window
Clear
clc
Format lon
v = 0.5
for i=100
iter (i+1).i;
v (i+1)-sqrt (<<500 + (lon(v(i>>>*3) a (sc(i) + <0.02
v(2>>>>)/0.3)
ea (i+1)= abs, (w(i+1)-v(i)/v (i+1)>>*100;
If ea (i+1) <= 1E-11
break
End
End
{ iti'v'(a')
plot {V,iter}
axis tight
Grid on
Grind Min

V: iter Iter	V	Ea
0	0.5	0
1	239.05	99.791
2	294.17	18.756
3	302.16	7.895
4	303.85	0.060153
5	304.04	0.0088241
6	304.06	0.0012944
7	304.07	0.0012944
8	304.07	0.0012944
9	304.07	$0.9635e^{-12}$

Converging is 7 give 0=304.07

∴ the converging value is seen to be 304.07

Proof Ins

$$T_d = \frac{0.342}{50+(\ln v)^3} = 0.020$$

If $V = 304.07$

ie $T_5 = 9.8 \times 3.8 = 34.3$

$$= \frac{0.3 \times (304.07)^2 - 0.2(304.03)}{500 + (\ln 304.02)^3}$$

$$= 34.25$$

$$\simeq 34.3$$