

16/03/20 ENGE 382 Assignment
AJANI KEHINOE PATAUCK

Petroleum engineering
17/ENG021005

Command window

Clear

Cic

format short

v = 0.5;

m = 3.5;

g = 9.81;

F = m * g;

V = sqrt(C * (Cf + (0.02) * v)) * (log(v)) ^ 3) +
(10 * v(i)) + 17150 / 0.3);

For i = 1: 100

iter, Ci+1 = i;

V(Ci+1) = sqrt(C * (Cf + (0.02) * v(Ci))) * (log(v(Ci))) ^ 3) +
(10 * v(Ci)) + 17150 / 0.3);

ea(Ci+1) = abs((V(Ci+1) - V(Ci)) / V(Ci));

if ea(Ci+1) <= 0.0000000001

break

end

end

table = table(Ci, iter, V, ea)

20x3 table

Var (iter)	Var ₂ (v)	Var ₃ (ea)
0	239.05	0
1	294.2	5514.9
2	302.65	844.85
3	303.89	124.7
4	304.08	78.312
5	304.1	2.6821
6	304.11	0.39425
7	304.11	0.057844
8	304.11	0.0084868
9	304.11	0.0012452
10	304.11	0.00018269
11	304.11	2.6804e-05
12	304.11	3.9326e-06
13	304.11	5.7699e-07
14	304.11	8.4651e-08
15	304.11	1.242e-08
16	304.11	1.8227e-09
17	304.11	2.6216e-10
18	304.11	3.979e-11
19	304.11	5.6843e-12

Converging at iter = 7; v = 304.11

$$F_0 = 0.3 v^2 - 0.02 v$$

$$(500 + (\ln v)^3)$$

$$F_0 = \frac{0.3 (304.11)^2 - 0.02 (304.11)}{500 + (\ln 304.11)^3}$$

$$F_0 = \frac{27,744.8676 - 6.0822}{686.8931}$$

$$F_0 = 34.31 N$$