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MATRIC NO.: 16/ENG07/024

DEPARTMENT: PETROLEUM ENGINEERING

$$Fd = \frac{0.3v^2}{500+(Inv)^3} - 0.02v$$

Fd =mg

Fd =3.5*9.8=34.3

$$\frac{0.3v^2}{500+(Inv)^3} - 0.02v = 34.3$$

MATLAB SOLUTION

```
commandwindow
clear
clc
close all
format short g
v=0.5;
for i=1: inf
iter (i+1) = i;
v (i+1) = ((((0.02*v (i))+34.3)*(500+(log (v (i)))^3))/0.3)^(1/2)
Ea (i+1) = abs ((v (i+1)-v (i))/v (i+1))*100
if Ea (i+1) <=1E-11
break
```

```
end
end
muneerah = [iter' v' Ea']
```

ans:

muneerah =

0	0.5	0
1	239.05	99.791
2	294.17	18.736
3	302.61	2.7894
4	303.85	0.40992
5	304.04	0.060144
6	304.06	0.0088222
7	304.07	0.0012941
8	304.07	0.00018981
9	304.07	2.7842e-05
10	304.07	4.0838e-06
11	304.07	5.9902e-07
12	304.07	8.7865e-08
13	304.07	1.2888e-08
14	304.07	1.8904e-09
15	304.07	2.7729e-10
16	304.07	4.066e-11

17 304.07 5.9822e-12