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17/ENG07/1006
PETROLEUM ENGINEERING
ENG382

ASSIGNMENT 1

```
Commandwindow
clear
clc
format short
V=0.5
m=3.5
g=9.8
F=m*g
V=sqrt((((F+(0.02*V))((Log(V)^3))+(10*V)+(7150/0.3);
for i=1:inf
iter(i+1)=i
v(i+1)=sqrt((((F+(0.02*v(i)))*(log(v(i)))^3)+(10*v(i))+
(7150/0.3);
Ea(i+1)=abs(((v(i+1)-v(i))/v(i+1)*100);
if Ev(i+1)<=1E-1
break
end
end
table=table(iter:v:Ea')
```

Output

iter	V	Ea
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	0.0088522
7	304.09	0.0012941
8	304.09	0.00018981

9	304.07	$2.78428^{-0.5}$
10	304.07	$4.08382^{-0.6}$
11	304.07	$8.78652^{-0.6}$
12	304.07	$1.28888^{-0.8}$

Converging at iter = 7, $\therefore V = 304.07$

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

If $V = 304.07$

Recall $F_L = 9.8 + 3.5 = 34.30$

Substituting $V = 304.07$

$$Fr = \frac{0.3 * (304.07)^2}{500 + (\ln (304.7)^3)}$$

$Fp = 34.3$//