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Assignment

Command Window

```
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 Ea(i+1) <= 1e-1
break
end
end
table = table(Iter', v, Ea)
```

Output

Iter	v	Ea
0	0.5	0
1	299.05	99.741
2	294.17	18.736
3	302.61	2.7894
4	303.85	0.40992
5	304.04	0.060144
6	304.06	0.008822
7	304.07	0.0012941
8	304.07	0.00018981
9	304.07	$0.1842e^{-0.5}$
10	304.07	$+0838e^{-0.6}$
11	304.07	$8.7865e^{-0.8}$
12	304.07	$:3.88e^{-0.8}$

Converging at Iter = 7, v = 304.7

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

If $v = 304.07$

Recall $F_e = 9.8 \times 3.5 = 34.30$

Substituting $V = 304.07$

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

$$F_p = 40.3826 - 6.60814$$

$$= 34.3$$