

Ejike David Chinedu

ENG382

18/ENG04/078

Elect / Elect



Assignment

command window

```
clear
```

```
clc
```

```
format short
```

```
v = 0.5
```

```
m = 3.5
```

```
cr = 9.8
```

```
f = m * cr
```

```
v = sqrt(((f + (0.02 * v)) * (log(v)^3)) + (10 * v) + 17150) / (0.3);
```

```
for i = 1 : 10
```

```
1 for Ci+1 = i
```

```
v = Ci+1 = sqrt(((f + (0.02 * vCi)) * (log(vCi))^3) + (10 * vCi) + 17150) / (0.3);
```

```
Ea(Ci+1) = abs((vCi+1) - vCi) / vCi+1 * 100;
```

```
if Ea(Ci+1) <= 1E-11
```

```
break
```

```
end
```

```
end
```

```
table = table(Citer; v; Ea')
```

Output

iter	v	E_n
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	$2.7842 e^{-0.5}$
10	304.07	$4.0838 e^{-0.6}$
11	304.07	$8.7865 e^{-0.8}$
12	304.07	$1.2888 e^{-0.8}$
13	304.07	$1.8904 e^{-0.9}$
14	304.07	$2.727 e^{-1.0}$
15	304.07	$4.0679 e^{-1.1}$
16	304.07	$5.9635 e^{-1.2}$

Converging at iter = 7; $v = 304.07$

$$\text{Pure } F_p = 9.8 \times 3.5 = 34.30$$

Substituting $v = 304.07$

$$F_p = 0.3 \times (304.07)^2 - 0.22 (304.07)$$

$$500 + (1.7 (304.07))^3$$

$$F_p = 40.38195931 - 6608.14$$

$$F_p = 34.3$$