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17/ENG05/008
Mechatronics Engineering

D63.

Command window

```
clear
clc
syms x
format short g
f = exp(-0.5*x)*(4-x)-2;
fprime = diff(f)
x = 0.5;
iter(i+1) = i;
x(i) = x;
x = double(subs(x - f/(fprime)))
x(i+1) = x;
ea(i+1) = abs((x(i+1) - x(i))/x(i+1))*100;
if ea(i+1) <= 1e-21
break
end
end
Table = table('iter', 'x' 'ea')
Table.properties.VariableNames = {'iteration number' 'values of x', 'error'}
```

Output

Table

iter	Values of x	Error
0	0.5	0
1	0.83889	40.397
2	0.88496	5.2059
3	0.88571	0.084972
4	0.88571	2.2247e-05
5	0.88571	1.5293e-12
6	0.88571	0

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