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17 EN602 / 033
Computer Engineering
EN6382

Command window

clear

clc

Syms x

format short g

f = (-0.5 * x)^k * (4 - x) - z

f_prime = diff(f, x);

alpha = 0.5;

for i = 1:10

iter(i * 1) = i

x(i) = x_i

k = double(sqrt(x - (f / f_prime)));

x(i+1) = x_i

ea(i+1) = abs((x(i+1) - x(i)) / x(i+1)) * 100

if ea(i) < 1E-20

break

end

End

Sunny = Table(iter, x, ea)

Sunny properties variable names - {iteration number, 'value of x', 'error'}

Iteration no	Values of x	Errors
0	0.5	0
1	0.83889	40.391
2	0.88496	5.2054
3	0.88571	0.084972
4	0.88571	$2.2247e^{-9}$
5	0.88571	$1.5293e^{-12}$
6	0.88571	0