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17/EN/004/020

Electrical / Electronics

Command Window

clear

clc

syms x

format short g.

f = 8 \* x \* (0.5 - x) \* (4 - x) - 2

F\_prime = diff(f);

x = 0.5

for i = 1:10.

  i887(i+1) = i

  x(i) = x;

  x = double(subs(x - (f / F\_prime)));

  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

code. Table (iter', x; ea')

code - properties, variable names (iteration number, values of x, errors)

Output iteration number	Value of $x$	Errors
0	0.5	0
1	0.83859	40.891
2	0.88496	5.2054
3	0.88571	0.084972
4	0.88571	2.22478 <sup>-05</sup>
5	0.88571	1.52938 <sup>-12</sup>
6	0.88571	0