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Mechanical Engineering

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Command window

clear

clc

syms x

format short g

f = exp(0.5*x) * (4-x)-2;

f_prime = diff(f);

x = 0.5;

for i = 1:10;

iter(i) = i;

x(i) = x;

x = double(csolve(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

end

ZaRegu = table(iter, 'x', ea)

ZaRegu.Properties.VariableNames = {'Iteration number', 'Values of x', errors}

OUT PUT

ZaBog U:

Iter	Values of x	Error
0	0.5	0
1	0.83889	10.397
2	0.88496	5.2094
3	0.88571	0.084972
4	0.88571	2.2247e-05
5	0.88571	15293e-12
6	0.88571	0