

Crisscross window

clear

clc

syms x

format short g

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

$$f_{prime} = \text{diff}(f);$$

$$x = 0.5;$$

for i = 1:10

$$U_{eq}(i+1) = i;$$

$$x(i) = x;$$

$$x = \text{double}(\text{subs}(x - (f/f_{prime})));$$

$$x(i+1) = x;$$

$$ea(i+1) = \text{abs}((x(i+1) - x(i)) / x(i+1)) * 100$$

$$\text{if } ea(i+1) \leq 1E-2L$$

break

end

end

log Table('itr', 'x', 'ea')

log Properties: parameter variable names: {'iteration number', 'value of x', 'error'}

Output

iteration number	Value of x	errors
0	0.5	0
1	0.83859	$40 = 391$
2	0.88496	$5 = 2054$
3	0.88571	$0 = 084972$
4	0.88571	$2.2247e^{-0.5}$
5	0.88571	$1.5293e^{-12}$
6	0.88571	0