The minimizer is located in the interval [a=[0.578750;-0.197500] and b=[-0.748750;0.117500]]

>> HW2\_2

The initial width of the uncertainty interval is 1.364361

The Number of necessary iterations required is 4

Initial Values

Initial interval [a=[0.578750;-0.197500] and b=[-0.748750;0.117500]]

a0=[0.578750,-0.197500]

b0=[-0.748750,0.117500]

f(a0)=[0.672619]

f(b0)=[1.074694]

Initial Value of s=[0.071690,-0.077181]

Initial Value of t=[-0.241690,-0.002819]

Initial Value of f(s)=[0.022616]

Initial Value of f(t)=[0.117533]

Iteration number i=1

a1 = [0.265370,-0.123139]

b1 = [0.071690,-0.077181]

f(a1) = [0.153654]

f(b1) = [0.022616]

New width interval [a=[0.578750;-0.197500] and b=[-0.241690;-0.002819]]

width=0.843222

Iteration number i=2

a2 = [0.071690,-0.077181]

b2 = [-0.048010,-0.048777]

f(a2) = [0.022616]

f(b2) = [0.014089]

New width interval [a=[0.265370;-0.123139] and b=[-0.241690;-0.002819]]

width=0.521140

Iteration number i=3

a3 = [-0.048010,-0.048777]

b3 = [-0.121990,-0.031223]

f(a3) = [0.014089]

f(b3) = [0.036496]

New width interval [a=[0.071690;-0.077181] and b=[-0.241690;-0.002819]]

width=0.322082

Iteration number i=4

a4 = [-0.002289,-0.059626]

b4 = [-0.048010,-0.048777]

f(a4) = [0.010813]

f(b4) = [0.014089]

New width interval [a=[0.071690;-0.077181] and b=[-0.121990;-0.031223]]

width=0.199058

The final width of the uncertainty interval is 0.199058

>>