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1 run: git/c/algorithms/bisection-method.c
2
3 f(x) = x4 - x - 10
4
5 a      b      t      f(a)      f(b)      f(t)
6 i:0:    1.000    2.000    1.500    -10.000    4.000    -6.438
7 i:1:    1.500    2.000    1.750    -6.438    4.000    -2.371
8 i:2:    1.750    2.000    1.875    -2.371    4.000    0.485
9 i:3:    1.750    1.875    1.812    -2.371    0.485    -1.020
10 i:4:    1.812    1.875    1.844    -1.020    0.485    -0.288
11 i:5:    1.844    1.875    1.859    -0.288    0.485    0.093
12 i:6:    1.844    1.859    1.852    -0.288    0.093    -0.098
13 i:7:    1.852    1.859    1.855    -0.098    0.093    -0.003
14 i:8:    1.855    1.859    1.857    -0.003    0.093    0.045
15 i:9:    1.855    1.857    1.856    -0.003    0.045    0.021
16 i:10:    1.855    1.856    1.856    -0.003    0.021    0.009
17 result = 1.855, 1.856
18 exact error      = -0.001
19 relative error   = -0.001
20 percentage error = -0.053
21
22 f(x) = x - e-x
23
24 a      b      t      f(a)      f(b)      f(t)
25 i:0:    0.000    1.000    0.500    -1.000    0.632    -0.107
26 i:1:    0.500    1.000    0.750    -0.107    0.632    0.278
27 i:2:    0.500    0.750    0.625    -0.107    0.278    0.090
28 i:3:    0.500    0.625    0.562    -0.107    0.090    -0.007
29 i:4:    0.562    0.625    0.594    -0.007    0.090    0.041
30 i:5:    0.562    0.594    0.578    -0.007    0.041    0.017
31 i:6:    0.562    0.578    0.570    -0.007    0.017    0.005
32 i:7:    0.562    0.570    0.566    -0.007    0.005    -0.001
33 i:8:    0.566    0.570    0.568    -0.001    0.005    0.002
34 i:9:    0.566    0.568    0.567    -0.001    0.002    0.000
35 i:10:    0.566    0.567    0.567    -0.001    0.000    -0.000
36 result = 0.566, 0.567
37 exact error      = -0.001
38 relative error   = -0.002
39 percentage error = -0.172
40
41 f(x) = e-x - 3 log(x)
42
43 a      b      t      f(a)      f(b)      f(t)
44 i:0:    1.000    1.368    1.184    0.368    -0.685    -0.201
45 i:1:    1.000    1.184    1.092    0.368    -0.201    0.072
46 i:2:    1.092    1.184    1.138    0.072    -0.201    -0.067
47 i:3:    1.092    1.138    1.115    0.072    -0.067    0.001
48 i:4:    1.115    1.138    1.127    0.001    -0.067    -0.033
49 i:5:    1.115    1.127    1.121    0.001    -0.033    -0.016
50 i:6:    1.115    1.121    1.118    0.001    -0.016    -0.007
51 i:7:    1.115    1.118    1.116    0.001    -0.007    -0.003
52 i:8:    1.115    1.116    1.116    0.001    -0.003    -0.001
53 i:9:    1.115    1.116    1.115    0.001    -0.001    0.000
54 result = 1.115, 1.116
55 exact error      = -0.001
56 relative error   = -0.001
57 percentage error = -0.064
58
59 f(x) = e-x * (x2 + 5x + 2) + 1
60
61 a      b      t      f(a)      f(b)      f(t)
62 i:0:    1.000    2.000    1.500    3.943    3.165    3.622
63 i:1:    1.500    2.000    1.750    3.622    3.165    3.400
64 i:2:    1.750    2.000    1.875    3.400    3.165    3.284
65 i:3:    1.875    2.000    1.938    3.284    3.165    3.225
66 i:4:    1.938    2.000    1.969    3.225    3.165    3.195
67 i:5:    1.969    2.000    1.984    3.195    3.165    3.180
68 i:6:    1.984    2.000    1.992    3.180    3.165    3.173
69 i:7:    1.992    2.000    1.996    3.173    3.165    3.169
70 i:8:    1.996    2.000    1.998    3.169    3.165    3.167

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67 i:9:      1.998      2.000      1.999      3.167      3.165      3.166
68 i:10:     1.999      2.000      2.000      3.166      3.165      3.166
69 result = 1.999, 2.000
70 exact error      = -0.001
71 relative error   = -0.000
72 percentage error = -0.049
```