Newton's Method

x	$f(x)=x^3+x-5$	$f'(x)=3x^2+1$	$x-f(x)/f'(x)$
1.5000000000	-0.12500000	7.750000000	1.516129032258
1.5161290323	0.001174851	7.895941727	1.515980240448
1.5159802404	1.00693461E-07	7.894588268	1.515980227693
1.5159802277	0.0000000000	7.894588152	1.515980227693
1.5159802277	0.0000000000	7.894588152	1.515980227693

Bisection method

Counter	a	b	f(a)	f(b)	m	f(m)
0	1.0000000000	2.0000000000	-3.00000000	5.0000000	1.500000000	-0.125000
1	1.500000000000	2.00000000000	-0.12500000	5.0000000	1.750000000	2.109375
2	1.500000000000	1.75000000000	-0.12500000	2.10937500	1.625000000	0.916016
3	1.500000000000	1.62500000000	-0.12500000	0.9160156	1.56250000	0.377197
4	1.500000000000	1.56250000000	-0.12500000	0.3771973	1.53125000	0.121613
5	1.500000000000	1.53125000000	-0.12500000	0.1216125	1.51562500	-0.0028
6	1.515625000000	1.53125000000	-0.00280380	0.1216125	1.52343750	0.059125
7	1.515625000000	1.52343750000	-0.00280380	0.0591254	1.51953125	0.028091
8	1.515625000000	1.51953125000	-0.00280380	0.0280913	1.51757813	0.012626
9	1.515625000000	1.51757812500	-0.00280380	0.0126264	1.51660156	0.004907
10	1.515625000000	1.51660156250	-0.00280380	0.0049069	1.51611328	0.00105
11	1.515625000000	1.51611328125	-0.00280380	0.0010505	1.51586914	-0.00088
12	1.515869140625	1.51611328125	-0.00087693	0.0010505	1.51599121	8.67E-05
13	1.515869140625	1.51599121094	-0.00087693	0.0000867	1.51593018	-0.0004
14	1.515930175781	1.51599121094	-0.00039513	0.0000867	1.51596069	-0.00015
15	1.515960693359	1.51599121094	-0.00015421	0.0000867	1.51597595	-3.4E-05
16	1.515975952148	1.51599121094	-0.00003375	0.0000867	1.51598358	2.65E-05
17	1.515975952148	1.51598358154	-0.00003375	0.0000265	1.51597977	-3.6E-06
18	1.515979766846	1.51598358154	-0.00000364	0.0000265	1.51598167	1.14E-05
19	1.515979766846	1.51598167419	-0.00000364	0.0000114	1.51598072	3.89E-06
20	1.515979766846	1.51598072052	-0.00000364	0.0000039	1.51598024	1.26E-07
21	1.515979766846	1.51598024368	-0.00000364	0.0000001	1.51598001	-1.8E-06
22	1.515980005264	1.51598024368	-0.00000176	0.0000001	1.51598012	-8.1E-07
23	1.515980124474	1.51598024368	-0.00000081	0.0000001	1.51598018	-3.4E-07
24	1.515980184078	1.51598024368	-0.00000034	0.0000001	1.51598021	-1.1E-07
25	1.515980213881	1.51598024368	-0.00000011	0.0000001	1.51598023	8.6E-09
26	1.515980213881	1.51598022878	-0.00000011	0.0000000	1.51598022	-5E-08
27	1.515980221331	1.51598022878	-0.00000005	0.0000000	1.51598023	-2.1E-08
28	1.515980225056	1.51598022878	-0.00000002	0.0000000	1.51598023	-6.1E-09
29	1.515980226919	1.51598022878	-0.00000001	0.0000000	1.51598023	1.24E-09
30	1.515980226919	1.51598022785	-0.00000001	0.0000000	1.51598023	-2.4E-09
31	1.515980227385	1.51598022785	0.00000000	0.0000000	1.51598023	-5.9E-10
32	1.515980227618	1.51598022785	0.00000000	0.0000000	1.51598023	3.25E-10
33	1.515980227618	1.51598022773	0.00000000	0.0000000	1.51598023	-1.3E-10
34	1.515980227676	1.51598022773	0.00000000	0.0000000	1.51598023	9.5E-11
35	1.515980227676	1.51598022770	0.00000000	0.0000000	1.51598023	-2E-11
36	1.515980227690	1.51598022770	0.00000000	0.0000000	1.51598023	3.76E-11
37	1.515980227690	1.51598022770	0.00000000	0.0000000	1.51598023	8.87E-12
38	1.515980227690	1.51598022769	0.00000000	0.0000000	1.51598023	-5.5E-12

| 39 | 1.515980227692 | 1.51598022769 | 0.00000000 | 0.0000000 | 1.51598023 | 1.69E-12 |
| 40 | 1.515980227692 | 1.51598022769 | 0.00000000 | 0.00000000 | 1.51598022769 | -1.9E-12 |