Root-finding Test Results

Results

Method	bs	fp	mfp	ill	AB	ITP	mAB	Rid	Bre
f01	1	1	1	1	1	1	1	1	1
f02	0.3994	0.3994	0.3994	0.3994	0.3994	0.3994	0.3994	0.3994	0.3994
f03	0.8041	0.8041	0.8041	0.8041	0.8041	0.8041	0.8041	0.8041	0.8041
f04	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000
f05	2.0946	2.0946	2.0946	2.0946	2.0946	2.0946	2.0946	2.0946	2.0946
f06	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383
f07	0.0693	0.0693	0.0693	0.0693	0.0693	0.0693	0.0693	0.0693	0.0693
f08	0.0347	0.0347	0.0347	0.0347	0.0347	0.0347	0.0347	0.0347	0.0347
f09	0.1096	0.1096	0.1096	0.1096	0.1096	0.1096	0.1096	0.1096	0.1096
f10	0.0525	0.0525	0.0525	0.0525	0.0525	0.0525	0.0525	0.0525	0.0525
f11	0.0256	0.0256	0.0256	0.0256	0.0256	0.0256	0.0256	0.0256	0.0256
f12	0.3460	0.3460	0.3460	0.3460	0.3460	0.3460	0.3460	0.3460	0.3460
f13	0.2451	0.2451	0.2451	0.2451	0.2451	0.2451	0.2451	0.2451	0.2451
f14	0.1649	0.1649	0.1649	0.1649	0.1649	0.1649	0.1649	0.1649	0.1649
f15	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
f16	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
f17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
f18	0.5162	0.5162	0.5162	0.5162	0.5162	0.5162	0.5162	0.5162	0.5162
f19	0.5395	NaN	0.5395	0.5395	0.5395	0.5395	0.5395	0.5395	0.5395
f20	0.5527	NaN	0.5527	0.5527	0.5527	0.5527	0.5527	0.5527	0.5527
f21	0.4100	0.4100	0.4100	0.4100	0.4100	0.4100	0.4100	0.4100	0.4100
f22	0.4525	0.4525	0.4525	0.4525	0.4525	0.4525	0.4525	0.4525	0.4525
f23	0.4756	0.4756	0.4756	0.4756	0.4756	0.4756	0.4756	0.4756	0.4756
f24	3.0000	NaN	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
f25	4.0000	NaN	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000
f26	2.4746	NaN	2.4746	2.4746	2.4746	2.4746	2.4746	2.4746	2.4746
f27	1.8892	NaN	1.8892	1.8885	1.8887	1.8891	1.8892	1.8891	1.8891
f28	7.1430	NaN	7.1430	7.1430	7.1430	7.1430	7.1430	7.1430	7.1430
f29	3.0004	NaN	3.0004	2.9996	2.9995	3.0000	3.0004	3.0005	2.9998
f30	4.2672	NaN	4.2672	4.2672	4.2672	4.2672	4.2672	4.2672	4.2672
f31	0.3183	0.3183	0.3183	0.3183	0.3183	0.3183	0.3183	0.3183	0.3183

Method	bs	fp	mfp	ill	AB	ITP	mAB	Rid	Bre
f32	1.3258	1.3258	1.3258	1.3258	1.3258	1.3258	1.3258	1.3258	1.3258
f33	0.8655	0.8655	0.8655	0.8655	0.8655	0.8655	0.8655	0.8655	0.8655
f34	0.7391	0.7391	0.7391	0.7391	0.7391	0.7391	0.7391	0.7391	0.7391
f35	0.6567	0.6567	0.6567	0.6567	0.6567	0.6567	0.6567	0.6567	0.6567
f36	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667
f37	0.7778	NaN	0.7778	0.7778	0.7778	0.7778	0.7778	0.7778	0.7778
f38	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333
f39	0.3333	NaN	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333	0.3333
f40	0.6667	-1.0000	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667	0.6667
f41	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383	0.1383
f42	1.0000	3.0000	1.0000	3.0000	3.0000	1.0000	1.0000	1.0000	3.0000
f43	0.0000	NaN	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
f44	0.0000	NaN	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
f45	0.0000	NaN	0.0000	NaN	NaN	0.0000	0.0000	0.0000	0.0000
f46	0.1016	NaN	0.1016	0.1016	0.1016	0.1016	0.1016	0.1016	0.1016
f47	0.0077	0.0077	0.0077	0.0077	0.0077	0.0077	0.0077	0.0077	0.0077
f48	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
f49	-0.6823	-0.6823	-0.6823	-0.6823	-0.6823	-0.6823	-0.6823	-0.6823	-0.6823
f50	-2.1038	-2.1038	-2.1038	-2.1038	-2.1038	-2.1038	-2.1038	-2.1038	-2.1038
f51	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
f52	1.0000	NaN	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
f53	1.6968	1.6968	1.6968	1.6968	1.6968	1.6968	1.6968	1.6968	1.6968
f54	0.5236	0.5236	0.5236	0.5236	0.5236	0.5236	0.5236	0.5236	0.5236
f55	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
f56	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
f57	3.0000	NaN	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
f58	1.5574	1.5574	1.5574	1.5574	1.5574	1.5574	1.5574	1.5574	1.5574
f59	1.2564	1.2564	1.2564	1.2564	1.2564	1.2564	1.2564	1.2564	1.2564
f60	0.3545	0.3545	0.3545	0.3545	0.3545	0.3545	0.3545	0.3545	0.3545
f61	1.4045	1.4045	1.4045	1.4045	1.4045	1.4045	1.4045	1.4045	1.4045
f62	1.8955	1.8955	1.8955	1.8955	1.8955	1.8955	1.8955	1.8955	1.8955

Iteration count

Method	bs	fp	mfp	ill	AB	ITP	mAB	Rid	Bre
f01	1	33	1	9	7	8	1	2	9
f02	48	85	14	11	11	47	10	14	12
f03	48	107	17	15	22	49	11	12	11
f04	48	48	13	11	10	9	8	10	9
f05	48	31	15	8	7	42	8	12	7
f06	48	29	14	8	9	12	10	10	9
f07	48	29	15	11	10	14	11	12	11
f08	48	30	16	12	12	17	11	10	11
f09	48	16	14	11	8	11	10	14	9
f10	48	13	14	9	7	10	7	14	9
f11	48	11	13	9	7	9	7	14	8
f12	48	39	14	9	8	49	10	12	8
f13	48	80	17	11	9	16	10	14	9
f14	48	167	17	11	11	48	11	14	12
f15	48	7	8	8	6	38	7	10	7
f16	48	5	6	6	5	9	6	10	6
f17	48	5	5	6	5	7	5	10	6
f18	48	79	15	9	7	10	9	12	8
f19	48	200	15	13	8	11	11	14	8
f20	48	200	17	21	9	37	11	14	12
f21	48	33	13	9	8	10	10	10	9
f22	48	32	14	10	8	9	7	10	9
f23	48	31	13	11	8	9	7	10	9
f24	48	200	47	90	107	48	47	78	132
f25	48	200	47	174	189	48	47	60	111
f26	48	200	47	90	107	48	47	76	132
f27	12	200	12	33	36	17	12	22	30
f28	48	200	47	89	106	48	47	72	132
f29	10	200	10	57	44	2	10	16	29
f30	48	200	17	51	56	29	12	14	13
f31	48	179	18	13	4	48	11	14	11
f32	48	90	16	13	10	49	11	14	12
f33	48	190	13	14	14	47	11	16	13
f34	48	10	10	9	7	14	8	14	9

	bs	fp	mfp	ill	AB	ITP	mAB	Rid	Bre
f35	48	13	21	13	12	48	16	20	10
f36	48	39	47	42	48	42	47	46	38
f37	48	200	21	23	25	12	16	22	30
f38	48	47	47	54	54	48	47	52	46
f39	48	200	47	156	156	48	47	74	72
f40	48	7	47	90	90	48	47	58	48
f41	48	30	18	12	11	48	13	12	12
f42	48	21	14	11	8	11	11	16	9
f43	48	200	47	89	106	48	47	78	115
f44	48	200	47	172	191	48	47	54	113
f45	48	200	47	200	200	48	47	50	123
f46	48	200	18	24	21	48	12	12	14
f47	48	154	18	15	12	49	14	16	15
f48	48	43	20	14	12	19	17	16	15
f49	48	24	13	11	8	48	10	10	10
f50	48	39	17	13	11	12	10	12	11
f51	48	26	18	10	8	11	9	10	9
f52	48	200	19	36	19	49	13	16	16
f53	48	30	34	10	10	38	11	16	12
f54	48	14	13	7	6	10	8	10	7
f55	48	68	13	11	8	9	8	2	10
f56	48	56	13	11	8	9	9	12	10
f57	48	200	20	19	29	49	10	12	11
f58	48	24	16	10	7	11	10	10	9
f59	48	142	20	14	13	48	10	12	12
f60	48	13	12	8	6	10	7	12	7
f61	48	31	14	12	12	11	10	16	10
f62	48	31	14	9	7	9	8	12	8
SUM	2855	5631	1279	1967	1980	1768	1022	1348	1634
AVE	46	91	21	32	32	29	16	22	26
MAX	48	200	47	200	200	49	47	78	132
Method	bs	fp	mfp	ill	AB	ITP	mAB	Rid	Bre

Precision = 10^{-14}

Legend:

bs – Bisection method

fp – False position

mfp – Modified false position

ill – Illinois method

AB – Anderson-Bjork

ITP – Interpolate, truncate, project

mAB – Modified Anderson-Bjork (new)

Rid – Ridders

Bre – Brent