

# Global minimizer found by the BIRECTv algorithm with modified domain from Table 1

Problem number (from Table A1)	Dimension $n$	Modified domain $\tilde{D}$	Global minimizer found by BIRECTv	Globally optimal known solution (Source [4,30? ])
1, 2, 3	2, 5, 10	$[-15, 32.1]^n$	[0.0000038147,	[0]
4	2	$[3.02416992190.5061035156$	[3.0000000000 0.4980468750]	[3; 0.5]
5, 6, 7	2	$[-100, 110.7]^2$	[0.0001953125 0.0001953125]	[0; 0]
8	2	$[-10, 10.1]^2$	[0.9987304687 3.0008789062]	[1; 3]
9	2	--	[3.1396484375 2.2753906250]	[3.1416; 2.275]
10	4	--	[0.9993489583,	[1; 1; 1; 1]
11	2	$[-10, 10, 4554]^2$	[1.0033203125 -0.7069335937]	$[2(-(2^i-2)/(2^i))]$
12	5	$[-10.0, 12.301]^5$	[1.006 0.709 0.594 0.545 0.523]	$[2(-(2^i-2)/(2^i))]$
13	10	$[-10.01, 12]^{10}$	[1.0002 0.7072 0.5949 0.5448 0.5216 0.5107 0.5045 0.5021 0.4997 0.4997]	$[2(-(2^i-2)/(2^i))]$
14	2	--	[3.1412760417, 3.1412760417]	$[\pi; \pi]$
15	2	--	[0.0000000000 -1.0000000000]	[0; -1]
16	2	$[-600, 692.2]^2$	[-0.0009412130 -0.0009412130]	[0]
17	3	--	[0.114 0.557 0.854]	[0.115; 0.556; 0.852]
18	6	--	[0.203 0.148 0.476 0.273 0.312 0.656]	[0.202 0.150 0.477 0.275 0.312 0.657]
19	2	--	[-0.0911458333 0.7096354167]	[-0.090; 0.713]
20	2	$[-10, 10.5]^2$	[1.0027604167 1.0027604167]	[1]
21	5	$[-10, 10.5]^5$	[0.9973958333,	[1]
22	10	$[-10, 10.5]^{10}$	[0.9973958333,	[1]
23	2	--	[0.0260416667, 0.0260416667]	[0]
24	2	--	[2.203 1.571]	[2.203 1.571]
25	5	$[1.04, \pi]^5$	[2.202 1.570 1.285 1.923 1.720]	[2.203 1.571 1.285 1.923 1.720 ]
26	10	--	[2.209 1.571 1.288 1.117 0.982 1.571 0.834 2.356 0.736 1.571]	[2.203 1.571 1.285 1.923 1.720 1.571 1.4
27	4	--	[1 2 3 4]	[1 2 3 4]
28	4	--	[-0.021 0.002 -0.039 -0.039]	[0]
29	8	$[-4, 4.01]^8$	[0.009 -0.001 0.005 0.005 -0.050 0.005 0.005 0.005]	[0]
30	4	--	[1.001 2.000 2.000 3.000]	[2.000 1.000 3.000 2.000]
31	2	--	[-0.0003483073]	[0]
32	5	$[-5.12, 5.30]^5$	[0.0001139323,	[0]
33	10	$[-5.12, 5.1202]^{10}$	[0.0001000000,	[0]
34	2	--	[1.0009765625, 1.0009765625]	[1]
35	5	--	[0.9997558594,	[1]
36	10	$[-5, 10.1]^{10}$	[0.9998168945,	[1]
37, 38	2, 5	$[-519, 519]^n$	[420.9798177083,	[420.9687474737558,
39	10	$[-500, 650]^{10}$	[420.9696451823,	[420.9687474737558,
40	4	--	[4.0006510417,	[4.000; 4.000; 4.000; 4.000]
41	4	--	[4.001 4.001 3.997 3.997]	[4.000; 4.001; 3.999; 3.999]
42	4	--	[4.001 4.001 3.997 3.997]	[4.001; 4.000; 3.999; 3.999]
43	2	$[-5.12, 512]^2$	[-1.426 -0.801]	[4.858, -7.083]
44	2	--	[0.0023958333, 0.0023958333]	[0]
45	5	--	[0.0023958333,	[0]
46	10	--	[0.0023958333,	[0]
47	2	$[-10, 11.5]^2$	[0.0016276042 -0.0065104167]	[0]
48	5	$[-10, 10.5]^5$	[0.0016276042,	[0]
49	10	$[-10, 10.5]^{10}$	[-0.0004069010,	[0]
50	6	$[-36.5, 36.5]^6$	[5.9880 9.980 11.976 11.976 9.9800 5.988]	$[i * (6 + 1 - i)]$
51	10	$[-120, 120]^{10}$	[10.000 17.969 23.984 27.969 29.922 29.922 27.969 24.062 17.969 10.000]	$[i * (10 + 1 - i)]$
52	2	$[-5, 12]^2$	[0.0026041667 0.0026041667]	[0]
53	5	$[-5, 10.01774]^5$	[0.0010247461,	[0]
54	10	$[-5, 13]^{10}$	[0.000 0.125 0.000 0.250 0.250 -1.000 0.000 0.129 0.129 0.125]	[0]

The values have been rounded to fit the size of the table. The sign "--" means that  $\tilde{D}$  is the same as in Table A1, [0.0000038147, means that the remaining values are the same.