

Solução do Problema scfxm3 - Solver HiGHS

Análise Computacional

16 de setembro de 2025

1 Informações do Problema

Informações do Problema:

- Nome: scfxm3
- Número de Variáveis: 1371
- Número de Restrições: 990
- Inviabilidade Primal: 5.500e-15
- Inviabilidade Dual: 0.000e+00
- Valor Primal: 5.490e+04
- Valor Dual: 5.490e+04
- Gap: 9.656e-21
- Número de Iterações: 22

2 Variáveis Primais e Custos Reduzidos

Tabela 1: Variáveis primais e custos reduzidos do problema scfxm3

Coordenada x	Valor x	Coordenada z	Valor z
1	0.000000	1	0.000000
2	0.000000	2	3.873700
3	55.679457	3	0.000000
4	0.000000	4	0.000000
5	10.800000	5	0.000000
6	35.760000	6	0.000000
7	0.000000	7	3.873700
8	112.926004	8	0.000000
9	0.000000	9	0.000000
10	22.080543	10	0.000000
11	9.040099	11	0.000000
12	22.906869	12	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
13	19.050000	13	0.000000
14	48.000000	14	0.000000
15	0.000000	15	3.260000
16	55.200000	16	0.000000
17	105.000000	17	0.000000
18	14.748993	18	0.000000
19	58.032275	19	0.000000
20	0.000000	20	0.049034
21	0.000000	21	0.657106
22	43.507468	22	0.000000
23	102.503568	23	0.000000
24	0.000000	24	10.030525
25	513.300017	25	0.000000
26	21.504651	26	0.000000
27	0.750000	27	0.000000
28	1.740615	28	0.000000
29	54.378686	29	0.000000
30	0.000000	30	1.939189
31	0.000000	31	0.000000
32	28.800000	32	0.000000
33	11.250000	33	0.000000
34	4.950000	34	0.000000
35	30.483150	35	0.000000
36	45.000000	36	0.000000
37	204.390000	37	0.000000
38	155.107946	38	0.000000
39	15.184554	39	0.000000
40	34.378779	40	0.000000
41	59.596911	41	0.000000
42	0.000000	42	0.237138
43	0.000000	43	6.922185
44	240.000000	44	0.000000
45	0.000000	45	6.879884
46	0.000000	46	6.879601
47	61.789799	47	0.000000
48	310.043757	48	0.000000
49	0.000000	49	7.112880
50	480.000000	50	0.000000
51	0.000000	51	7.070579
52	3950.037096	52	0.000000
53	0.000000	53	7.056101
54	60.254265	54	0.000000
55	16.575728	55	0.000000
56	39.678210	56	0.000000
57	0.000000	57	4.863763
58	48.647356	58	0.000000
59	174.703322	59	0.000000
60	51.443203	60	0.000000
61	0.000000	61	0.227031

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Coordenada x	Valor x	Coordenada z	Valor z
62	44.099117	62	0.000000
63	0.000000	63	0.424865
64	0.000000	64	0.218447
65	0.000000	65	5.863474
66	5.164376	66	0.000000
67	38.269891	67	0.000000
68	1102.945742	68	0.000000
69	38.905431	69	0.000000
70	0.000000	70	0.013373
71	5.387873	71	0.000000
72	31.247590	72	0.000000
73	79.534754	73	0.000000
74	0.000000	74	0.287779
75	0.000000	75	0.451949
76	71.723757	76	0.000000
77	26.304316	77	0.000000
78	274.640731	78	0.000000
79	0.000000	79	5.565649
80	16.040023	80	0.000000
81	83.480175	81	0.000000
82	302.712079	82	0.000000
83	0.000000	83	1.033675
84	0.000000	84	1.323330
85	3.610731	85	0.000000
86	4.444208	86	0.000000
87	0.000000	87	2.427829
88	0.827312	88	0.000000
89	0.000000	89	2.276342
90	0.000000	90	2.262844
91	6.112373	91	0.000000
92	0.000000	92	4.413577
93	0.000000	93	3.873700
94	0.000000	94	4.994098
95	0.000000	95	4.345453
96	0.000000	96	1.383789
97	74.246850	97	0.000000
98	0.000000	98	0.886258
99	1.064398	99	0.000000
100	15.399001	100	0.000000
101	31.356815	101	0.000000
102	42.874128	102	0.000000
103	55.200000	103	0.000000
104	24.000000	104	0.000000
105	0.000000	105	2.285806
106	0.000000	106	3.432862
107	0.000000	107	4.863763
108	0.000000	108	4.769677
109	3.000000	109	0.000000
110	0.000000	110	7.346744

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Coordenada x	Valor x	Coordenada z	Valor z
111	480.000000	111	0.000000
112	0.000000	112	7.323229
113	36.858349	113	0.000000
114	0.000000	114	7.325452
115	71.723757	115	0.000000
116	145.000000	116	0.000000
117	480.000000	117	0.000000
118	55.679457	118	0.000000
119	280.563514	119	0.000000
120	5.666543	120	0.000000
121	12.354000	121	0.000000
122	0.000000	122	0.012057
123	3.321600	123	0.000000
124	10.323457	124	0.000000
125	0.000000	125	0.041654
126	0.000000	126	4.035500
127	0.000000	127	3.833800
128	13.084740	128	0.000000
129	3.741444	129	0.000000
130	0.000000	130	0.189216
131	6.150000	131	0.000000
132	-0.000000	132	0.000000
133	1.691075	133	0.000000
134	-0.000000	134	0.000000
135	0.000000	135	0.184449
136	2.696581	136	0.000000
137	0.000000	137	0.091743
138	8.934987	138	0.000000
139	21.930000	139	0.000000
140	0.000000	140	0.869931
141	0.000000	141	0.347305
142	0.000000	142	0.085088
143	10.490750	143	0.000000
144	0.000000	144	0.032113
145	0.000000	145	0.220368
146	2.504262	146	0.000000
147	48.462000	147	0.000000
148	55.114920	148	0.000000
149	0.000000	149	1.493577
150	0.000000	150	0.970952
151	0.000000	151	0.708734
152	0.000000	152	0.623647
153	0.000000	153	0.030660
154	0.000000	154	0.044545
155	23.271600	155	0.000000
156	16.353750	156	0.000000
157	0.000000	157	0.125515
158	0.000000	158	0.128939
159	0.000000	159	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
160	-0.000000	160	0.000000
161	4.500000	161	0.000000
162	0.000000	162	0.000000
163	37.903737	163	0.000000
164	34.160000	164	0.000000
165	3.108748	165	0.000000
166	3.827107	166	0.000000
167	5.929615	167	0.000000
168	1.213065	168	0.000000
169	6.396776	169	0.000000
170	-0.000000	170	0.000000
171	123.000000	171	0.000000
172	-0.000000	172	0.000000
173	147.000000	173	0.000000
174	6.655280	174	0.000000
175	31.615952	175	0.000000
176	5.656923	176	0.000000
177	6.148829	177	0.000000
178	0.000000	178	0.424015
179	793.541834	179	0.000000
180	2.152204	180	0.000000
181	6.518693	181	0.000000
182	0.000000	182	3.575007
183	26.767702	183	0.000000
184	18.223543	184	0.000000
185	0.000000	185	0.051585
186	4.756252	186	0.000000
187	6.388319	187	0.000000
188	0.000000	188	0.177683
189	0.000000	189	5.174674
190	3.173589	190	0.000000
191	117.579781	191	0.000000
192	-0.000000	192	0.000000
193	27.060000	193	0.000000
194	15.999132	194	0.000000
195	150.600000	195	0.000000
196	-0.000000	196	0.000000
197	18.375000	197	0.000000
198	5.800308	198	0.000000
199	16.026394	199	0.000000
200	-0.000000	200	0.000000
201	56.349225	201	0.000000
202	0.000000	202	5.012800
203	2.775412	203	0.000000
204	0.000000	204	0.172283
205	177.882900	205	0.000000
206	0.000000	206	0.215885
207	10.979080	207	0.000000
208	13.530000	208	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
209	8.426633	209	0.000000
210	0.000000	210	0.173741
211	0.000000	211	0.099616
212	0.000000	212	0.168508
213	1.708157	213	0.000000
214	71.723757	214	0.000000
215	0.000000	215	0.000000
216	0.000000	216	0.000000
217	0.000000	217	0.000000
218	-0.000000	218	0.000000
219	0.000000	219	0.000000
220	0.000000	220	0.000000
221	-0.000000	221	0.000000
222	-0.000000	222	0.000000
223	0.000000	223	3.873700
224	64.800000	224	0.000000
225	0.000000	225	6.511419
226	89.800000	226	0.000000
227	0.000000	227	3.873700
228	119.200000	228	0.000000
229	0.000000	229	3.780000
230	219.200000	230	0.000000
231	0.000000	231	0.195340
232	25.000000	232	0.000000
233	59.900000	233	0.000000
234	84.900000	234	0.000000
235	0.000000	235	0.945649
236	100.000000	236	0.000000
237	103.500000	237	0.000000
238	203.500000	238	0.000000
239	0.000000	239	3.873700
240	44.500000	240	0.000000
241	0.000000	241	4.035500
242	0.000000	242	6.511419
243	69.500000	243	0.000000
244	0.000000	244	3.873700
245	25.000000	245	0.000000
246	0.000000	246	3.833800
247	0.000000	247	3.780000
248	55.000000	248	0.000000
249	0.000000	249	0.688800
250	25.000000	250	0.000000
251	19.000000	251	0.000000
252	0.000000	252	0.493460
253	44.000000	253	0.000000
254	0.000000	254	0.945649
255	50.000000	255	0.000000
256	1.851031	256	0.000000
257	39.848969	257	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
258	91.700000	258	0.000000
259	5.200000	259	0.000000
260	19.800000	260	0.000000
261	0.000000	261	2.731419
262	24.763514	262	0.000000
263	0.000000	263	0.005000
264	50.236486	264	0.000000
265	0.000000	265	0.101640
266	0.000000	266	0.050000
267	50.000000	267	0.000000
268	0.000000	268	0.851949
269	0.000000	269	0.050000
270	150.000000	270	0.000000
271	0.000000	271	0.060000
272	25.000000	272	0.000000
273	0.000000	273	2.781419
274	0.000000	274	0.055000
275	75.000000	275	0.000000
276	0.000000	276	0.045000
277	0.000000	277	0.111640
278	34.900000	278	0.000000
279	15.100000	279	0.000000
280	0.000000	280	0.861949
281	3.500000	281	0.000000
282	196.500000	282	0.000000
283	0.000000	283	0.005000
284	20.000000	284	0.000000
285	0.000000	285	2.847719
286	5.800000	286	0.000000
287	44.200000	287	0.000000
288	0.000000	288	0.111300
289	0.000000	289	0.056640
290	25.000000	290	0.000000
291	0.000000	291	0.066300
292	0.000000	292	0.806949
293	100.000000	293	0.000000
294	0.000000	294	0.066300
295	10.000000	295	0.000000
296	0.000000	296	0.071300
297	0.000000	297	2.852719
298	40.000000	298	0.000000
299	0.000000	299	0.076300
300	0.000000	300	0.121300
301	25.000000	301	0.000000
302	0.000000	302	0.019660
303	0.000000	303	0.019660
304	0.000000	304	0.730649
305	0.000000	305	0.000000
306	100.000000	306	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
307	0.000000	307	0.086500
308	34.979457	308	0.000000
309	15.020543	309	0.000000
310	0.000000	310	2.453119
311	0.000000	311	0.373000
312	0.000000	312	0.188800
313	0.000000	313	0.077500
314	150.000000	314	0.000000
315	0.000000	315	0.911100
316	9.000000	316	0.000000
317	41.000000	317	0.000000
318	0.000000	318	0.474160
319	0.000000	319	1.187249
320	0.000000	320	0.116000
321	0.000000	321	0.019300
322	200.000000	322	0.000000
323	10.479457	323	0.000000
324	9.520543	324	0.000000
325	0.000000	325	0.108000
326	0.000000	326	2.636619
327	0.000000	327	0.095100
328	25.000000	328	0.000000
329	11.008898	329	0.000000
330	13.991102	330	0.000000
331	0.000000	331	0.834100
332	10.000000	332	0.000000
333	0.000000	333	0.096700
334	0.000000	334	0.639160
335	0.000000	335	0.994249
336	41.700000	336	0.000000
337	8.300000	337	0.000000
338	0.000000	338	0.049000
339	220.335686	339	0.000000
340	0.000000	340	6.511419
341	0.000000	341	3.780000
342	0.000000	342	3.470576
343	68.247549	343	0.000000
344	1.003602	344	0.000000
345	0.000000	345	1.531250
346	0.000000	346	0.547400
347	0.970446	347	0.000000
348	8.926875	348	0.000000
349	0.000000	349	1.993434
350	8.926875	350	0.000000
351	8.807850	351	0.000000
352	1.409966	352	0.000000
353	33.020286	353	0.000000
354	0.000000	354	8.049881
355	-0.000000	355	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
356	238.050002	356	0.000000
357	0.000000	357	4.515200
358	1.333160	358	0.000000
359	0.000000	359	1.682838
360	-0.000000	360	0.000000
361	0.000000	361	1.861947
362	0.000000	362	2.829007
363	0.000000	363	0.127497
364	0.000000	364	3.235742
365	0.000000	365	1.152972
366	0.000000	366	2.637633
367	0.000000	367	0.762833
368	0.000000	368	1.853235
369	0.000000	369	0.242494
370	0.000000	370	1.377458
371	26.028110	371	0.000000
372	0.000000	372	4.459421
373	0.000000	373	2.072461
374	0.000000	374	3.672100
375	0.000000	375	1.618712
376	0.000000	376	2.858087
377	0.000000	377	1.139011
378	0.000000	378	2.295495
379	0.000000	379	0.890383
380	0.000000	380	0.476659
381	0.000000	381	0.638019
382	0.000000	382	0.368813
383	0.000000	383	0.536120
384	0.000000	384	1.313179
385	0.000000	385	1.489992
386	26.028110	386	0.000000
387	9.906086	387	0.000000
388	16.513746	388	0.000000
389	0.000000	389	1.191673
390	27.183858	390	0.000000
391	0.000000	391	1.761750
392	3.794378	392	0.000000
393	0.068664	393	0.000000
394	0.000000	394	5.236376
395	1.247397	395	0.000000
396	49.305866	396	0.000000
397	0.000000	397	1.768800
398	4.386921	398	0.000000
399	14565.019920	399	0.000000
400	13.260831	400	0.000000
401	0.000000	401	3.140656
402	0.000000	402	2.596815
403	0.000000	403	2.173673
404	0.000000	404	2.006756

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Coordenada x	Valor x	Coordenada z	Valor z
405	13.666840	405	0.000000
406	0.559131	406	0.000000
407	3.120272	407	0.000000
408	2.480468	408	0.000000
409	0.000000	409	0.103777
410	0.000000	410	5.668134
411	275.380633	411	0.000000
412	6.752451	412	0.000000
413	0.080673	413	0.000000
414	49.378048	414	0.000000
415	320.591350	415	0.000000
416	12.481089	416	0.000000
417	5.727036	417	0.000000
418	45.898648	418	0.000000
419	0.000000	419	0.300619
420	0.000000	420	0.730621
421	0.000000	421	1.395262
422	0.000000	422	2.340600
423	3.329043	423	0.000000
424	134.620482	424	0.000000
425	1.111917	425	0.000000
426	0.000000	426	7.719038
427	0.000000	427	44.578226
428	0.000000	428	6.917592
429	0.000000	429	0.597122
430	0.000000	430	1.074087
431	0.000000	431	0.655888
432	4.138470	432	0.000000
433	4.127536	433	0.000000
434	0.000000	434	5.109629
435	5.127538	435	0.000000
436	0.000000	436	1.799481
437	0.000000	437	50.428350
438	0.000000	438	4.620000
439	7.201989	439	0.000000
440	11740.391164	440	0.000000
441	0.000000	441	33.467065
442	12545.483857	442	0.000000
443	538.481929	443	0.000000
444	0.565331	444	0.000000
445	0.998358	445	0.000000
446	62.796882	446	0.000000
447	-0.000000	447	0.000000
448	-0.000000	448	0.000000
449	122.816142	449	0.000000
450	724.013378	450	0.000000
451	30.000000	451	0.000000
452	364.879728	452	0.000000
453	1705.228487	453	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
454	1.952108	454	0.000000
455	0.000000	455	0.227402
456	0.000000	456	0.564703
457	0.000000	457	0.100000
458	35.760000	458	0.000000
459	0.000000	459	3.873700
460	4.598573	460	0.000000
461	19.269713	461	0.000000
462	10.800000	462	0.000000
463	0.000000	463	0.000000
464	0.000000	464	3.873700
465	112.216131	465	0.000000
466	28.800000	466	0.000000
467	73.161427	467	0.000000
468	8.962017	468	0.000000
469	0.000000	469	0.000000
470	12.798347	470	0.000000
471	28.730287	471	0.000000
472	0.000000	472	3.260000
473	55.200000	473	0.000000
474	105.000000	474	0.000000
475	18.733769	475	0.000000
476	77.464677	476	0.000000
477	11.144446	477	0.000000
478	0.000000	478	1.456611
479	51.176471	479	0.000000
480	101.355554	480	0.000000
481	0.000000	481	9.937010
482	510.073323	482	0.000000
483	20.203663	483	0.000000
484	0.750000	484	0.000000
485	1.239893	485	0.000000
486	50.793470	486	0.000000
487	0.000000	487	1.912518
488	0.000000	488	0.000000
489	0.000000	489	0.000000
490	33.798347	490	0.000000
491	11.201653	491	0.000000
492	30.570500	492	0.000000
493	45.000000	493	0.000000
494	204.390000	494	0.000000
495	191.518667	495	0.000000
496	13.606791	496	0.000000
497	32.098783	497	0.000000
498	97.524115	498	0.000000
499	0.000000	499	3.670000
500	0.000000	500	6.887927
501	240.000000	501	0.000000
502	0.000000	502	6.877341

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Coordenada x	Valor x	Coordenada z	Valor z
503	0.000000	503	6.847886
504	0.000000	504	1.233249
505	351.683743	505	0.000000
506	0.000000	506	7.077774
507	480.000000	507	0.000000
508	0.000000	508	7.067188
509	3763.262069	509	0.000000
510	0.000000	510	7.024386
511	42.467658	511	0.000000
512	0.000000	512	0.906156
513	66.887857	513	0.000000
514	0.000000	514	0.274967
515	48.102518	515	0.000000
516	179.410112	516	0.000000
517	40.778243	517	0.000000
518	0.000000	518	0.308189
519	51.782920	519	0.000000
520	0.000000	520	0.839231
521	0.000000	521	0.207539
522	0.000000	522	5.768970
523	0.000000	523	0.141742
524	45.000000	524	0.000000
525	1232.163670	525	0.000000
526	59.711306	526	0.000000
527	14.770582	527	0.000000
528	7.827532	528	0.000000
529	37.500000	529	0.000000
530	89.068421	530	0.000000
531	0.000000	531	0.332619
532	0.000000	532	0.266728
533	113.363743	533	0.000000
534	24.727577	534	0.000000
535	272.482368	535	0.000000
536	0.000000	536	5.541093
537	25.067192	537	0.000000
538	68.654441	538	0.000000
539	346.007433	539	0.000000
540	0.000000	540	0.803095
541	0.000000	541	1.425952
542	4.144854	542	0.000000
543	3.980186	543	0.000000
544	0.000000	544	3.605517
545	0.900835	545	0.000000
546	0.000000	546	2.488918
547	0.000000	547	2.675144
548	6.115795	548	0.000000
549	0.000000	549	3.703262
550	0.000000	550	3.873700
551	0.000000	551	4.311110

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Coordenada x	Valor x	Coordenada z	Valor z
552	0.000000	552	3.721304
553	0.000000	553	0.192330
554	74.159500	554	0.000000
555	0.000000	555	1.165257
556	1.050416	556	0.000000
557	15.302200	557	0.000000
558	38.757113	558	0.000000
559	41.895120	559	0.000000
560	55.200000	560	0.000000
561	24.000000	561	0.000000
562	0.000000	562	2.532556
563	29.208259	563	0.000000
564	0.000000	564	0.274967
565	11.002437	565	0.000000
566	3.000000	566	0.000000
567	0.000000	567	7.327360
568	480.000000	568	0.000000
569	0.000000	569	7.321983
570	25.345146	570	0.000000
571	0.000000	571	7.307339
572	113.363743	572	0.000000
573	160.100000	573	0.000000
574	480.000000	574	0.000000
575	59.628287	575	0.000000
576	275.468208	576	0.000000
577	1.717713	577	0.000000
578	12.354000	578	0.000000
579	0.000000	579	0.264686
580	3.321600	580	0.000000
581	14.272287	581	0.000000
582	0.000000	582	0.105816
583	0.000000	583	4.035500
584	0.000000	584	3.833800
585	13.084740	585	0.000000
586	8.389140	586	0.000000
587	-0.000000	587	0.000000
588	6.150000	588	0.000000
589	-0.000000	589	0.000000
590	6.839910	590	0.000000
591	1.240800	591	0.000000
592	0.000000	592	0.093412
593	0.000000	593	0.010866
594	0.000000	594	0.119091
595	3.033958	595	0.000000
596	21.930000	596	0.000000
597	0.000000	597	0.407484
598	0.000000	598	0.547121
599	0.000000	599	0.529289
600	10.490750	600	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
601	10.979080	601	0.000000
602	0.000000	602	0.394967
603	0.000000	603	0.310592
604	48.462000	604	0.000000
605	55.114920	605	0.000000
606	0.000000	606	0.783262
607	0.000000	607	1.003445
608	0.000000	608	0.984437
609	0.000000	609	0.449857
610	0.000000	610	0.017412
611	0.000000	611	0.028783
612	23.271600	612	0.000000
613	16.353750	613	0.000000
614	0.000000	614	0.125515
615	0.000000	615	0.128939
616	0.000000	616	0.000000
617	0.000000	617	0.057748
618	4.500000	618	0.000000
619	0.000000	619	0.057748
620	37.926210	620	0.000000
621	34.160000	621	0.000000
622	3.108748	622	0.000000
623	0.373207	623	0.000000
624	5.929615	624	0.000000
625	4.666966	625	0.000000
626	6.399794	626	0.000000
627	-0.000000	627	0.000000
628	123.000000	628	0.000000
629	-0.000000	629	0.000000
630	147.000000	630	0.000000
631	6.556959	631	0.000000
632	29.689074	632	0.000000
633	5.656923	633	0.000000
634	6.148829	634	0.000000
635	0.000000	635	0.424015
636	793.528127	636	0.000000
637	2.155222	637	0.000000
638	6.518693	638	0.000000
639	0.000000	639	3.575007
640	27.025869	640	0.000000
641	18.139939	641	0.000000
642	0.000000	642	0.113998
643	4.756252	643	0.000000
644	6.388319	644	0.000000
645	0.000000	645	0.146872
646	0.000000	646	5.085646
647	3.170178	647	0.000000
648	125.558291	648	0.000000
649	-0.000000	649	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
650	27.060000	650	0.000000
651	16.063673	651	0.000000
652	150.600000	652	0.000000
653	-0.000000	653	0.000000
654	18.375000	654	0.000000
655	5.800308	655	0.000000
656	16.109997	656	0.000000
657	-0.000000	657	0.000000
658	56.349225	658	0.000000
659	0.000000	659	5.012800
660	2.781631	660	0.000000
661	0.000000	661	0.244478
662	178.022475	662	0.000000
663	2.573789	663	0.000000
664	0.000000	664	0.396452
665	13.530000	665	0.000000
666	7.112203	666	0.000000
667	0.000000	667	0.110644
668	1.253333	668	0.000000
669	0.000000	669	0.082673
670	6.909000	670	0.000000
671	113.363743	671	0.000000
672	0.000000	672	0.000000
673	0.000000	673	0.000000
674	0.000000	674	0.000000
675	-0.000000	675	0.000000
676	0.000000	676	0.000000
677	0.000000	677	0.000000
678	-0.000000	678	0.000000
679	-0.000000	679	0.000000
680	0.000000	680	3.873700
681	64.800000	681	0.000000
682	0.000000	682	6.511419
683	89.800000	683	0.000000
684	0.000000	684	3.873700
685	119.200000	685	0.000000
686	0.000000	686	3.780000
687	219.200000	687	0.000000
688	0.000000	688	0.100836
689	25.000000	689	0.000000
690	59.900000	690	0.000000
691	84.900000	691	0.000000
692	0.000000	692	0.921093
693	100.000000	693	0.000000
694	103.500000	694	0.000000
695	203.500000	695	0.000000
696	0.000000	696	3.873700
697	44.500000	697	0.000000
698	0.000000	698	4.035500

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Coordenada x	Valor x	Coordenada z	Valor z
699	0.000000	699	6.511419
700	69.500000	700	0.000000
701	0.000000	701	3.873700
702	25.000000	702	0.000000
703	0.000000	703	3.833800
704	0.000000	704	3.780000
705	55.000000	705	0.000000
706	0.000000	706	0.683324
707	25.000000	707	0.000000
708	19.000000	708	0.000000
709	0.000000	709	0.582488
710	44.000000	710	0.000000
711	0.000000	711	0.921093
712	50.000000	712	0.000000
713	1.940853	713	0.000000
714	39.759147	714	0.000000
715	91.700000	715	0.000000
716	5.200000	716	0.000000
717	19.800000	717	0.000000
718	0.000000	718	2.731419
719	19.668208	719	0.000000
720	0.000000	720	0.005000
721	55.331792	721	0.000000
722	0.000000	722	0.007136
723	0.000000	723	0.012136
724	50.000000	724	0.000000
725	0.000000	725	0.827393
726	0.000000	726	0.050000
727	150.000000	727	0.000000
728	0.000000	728	0.060000
729	25.000000	729	0.000000
730	0.000000	730	2.781419
731	0.000000	731	0.055000
732	75.000000	732	0.000000
733	0.000000	733	0.045000
734	0.000000	734	0.055000
735	50.000000	735	0.000000
736	0.000000	736	0.037864
737	0.000000	737	0.837393
738	3.500000	738	0.000000
739	196.500000	739	0.000000
740	0.000000	740	0.005000
741	20.000000	741	0.000000
742	0.000000	742	2.847719
743	5.800000	743	0.000000
744	44.200000	744	0.000000
745	0.000000	745	0.111300
746	15.100000	746	0.000000
747	9.900000	747	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
748	0.000000	748	0.104164
749	0.000000	749	0.782393
750	100.000000	750	0.000000
751	0.000000	751	0.066300
752	10.000000	752	0.000000
753	0.000000	753	0.071300
754	0.000000	754	2.852719
755	40.000000	755	0.000000
756	0.000000	756	0.076300
757	0.000000	757	0.121300
758	25.000000	758	0.000000
759	0.000000	759	0.076300
760	0.000000	760	0.114164
761	0.000000	761	0.706093
762	0.000000	762	0.000000
763	100.000000	763	0.000000
764	0.000000	764	0.086500
765	38.928287	765	0.000000
766	11.071713	766	0.000000
767	0.000000	767	2.453119
768	0.000000	768	0.373000
769	0.000000	769	0.188800
770	0.000000	770	0.077500
771	150.000000	771	0.000000
772	0.000000	772	0.905624
773	9.000000	773	0.000000
774	41.000000	774	0.000000
775	0.000000	775	0.563188
776	0.000000	776	1.162693
777	0.000000	777	0.116000
778	0.000000	778	0.019300
779	200.000000	779	0.000000
780	14.428287	780	0.000000
781	5.571713	781	0.000000
782	0.000000	782	0.108000
783	0.000000	783	2.636619
784	0.000000	784	0.095100
785	25.000000	785	0.000000
786	23.298477	786	0.000000
787	1.701523	787	0.000000
788	0.000000	788	0.828624
789	10.000000	789	0.000000
790	0.000000	790	0.096700
791	0.000000	791	0.728188
792	0.000000	792	0.969693
793	41.700000	793	0.000000
794	8.300000	794	0.000000
795	0.000000	795	0.049000
796	218.696488	796	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
797	0.000000	797	6.511419
798	0.000000	798	3.780000
799	0.000000	799	3.470576
800	70.954737	800	0.000000
801	0.999218	801	0.000000
802	0.000000	802	1.531250
803	0.000000	803	0.547400
804	1.016765	804	0.000000
805	9.376704	805	0.000000
806	0.000000	806	1.993434
807	9.376704	807	0.000000
808	9.251681	808	0.000000
809	1.481163	809	0.000000
810	34.687652	810	0.000000
811	0.000000	811	8.049881
812	-0.000000	812	0.000000
813	250.045441	813	0.000000
814	0.000000	814	4.515200
815	1.333160	815	0.000000
816	0.000000	816	1.682838
817	-0.000000	817	0.000000
818	0.000000	818	1.861947
819	0.000000	819	2.829007
820	0.000000	820	0.127497
821	0.000000	821	3.235742
822	0.000000	822	1.152972
823	0.000000	823	2.637633
824	0.000000	824	0.762833
825	0.000000	825	1.853235
826	0.000000	826	0.242494
827	0.000000	827	1.377458
828	26.028110	828	0.000000
829	0.000000	829	4.459421
830	0.000000	830	2.072461
831	0.000000	831	3.672100
832	0.000000	832	1.618712
833	0.000000	833	2.858087
834	0.000000	834	1.139011
835	0.000000	835	2.295495
836	0.000000	836	0.890383
837	0.000000	837	0.476659
838	0.000000	838	0.638019
839	0.000000	839	0.368813
840	0.000000	840	0.536120
841	0.000000	841	1.313179
842	0.000000	842	1.489992
843	26.028110	843	0.000000
844	10.406296	844	0.000000
845	17.296966	845	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
846	0.000000	846	1.191673
847	28.879767	847	0.000000
848	0.000000	848	1.761750
849	3.794378	849	0.000000
850	0.068664	850	0.000000
851	0.000000	851	5.236376
852	1.247397	852	0.000000
853	51.060236	853	0.000000
854	0.000000	854	3.240200
855	4.551972	855	0.000000
856	14656.592743	856	0.000000
857	13.662135	857	0.000000
858	0.000000	858	3.140656
859	0.000000	859	2.596815
860	0.000000	860	2.173673
861	0.000000	861	2.006756
862	13.666840	862	0.000000
863	0.465284	863	0.000000
864	2.596552	864	0.000000
865	2.064135	865	0.000000
866	0.000000	866	0.103777
867	0.000000	867	5.668134
868	229.159520	868	0.000000
869	4.045263	869	0.000000
870	0.067133	870	0.000000
871	51.172173	871	0.000000
872	266.781868	872	0.000000
873	10.386207	873	0.000000
874	6.384121	874	0.000000
875	47.958130	875	0.000000
876	0.000000	876	0.300619
877	0.000000	877	0.730621
878	0.000000	878	1.395262
879	0.000000	879	2.340600
880	3.452948	880	0.000000
881	140.143373	881	0.000000
882	1.119480	882	0.000000
883	0.000000	883	7.719038
884	0.000000	884	44.578226
885	0.000000	885	6.917592
886	0.000000	886	0.597122
887	0.000000	887	1.074087
888	0.000000	888	0.655888
889	4.138470	889	0.000000
890	4.335957	890	0.000000
891	0.000000	891	5.109629
892	5.127538	892	0.000000
893	0.000000	893	1.799481
894	0.000000	894	50.428350

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Coordenada x	Valor x	Coordenada z	Valor z
895	0.000000	895	4.620000
896	7.618322	896	0.000000
897	12221.758283	897	0.000000
898	0.000000	898	33.467065
899	13060.314993	899	0.000000
900	560.573492	900	0.000000
901	0.565331	901	0.000000
902	1.374768	902	0.000000
903	103.987039	903	0.000000
904	-0.000000	904	0.000000
905	0.000000	905	0.419928
906	121.120233	906	0.000000
907	715.535676	907	0.000000
908	30.000000	908	0.000000
909	350.303448	909	0.000000
910	1699.615774	910	0.000000
911	1.952108	911	0.000000
912	0.000000	912	0.247241
913	0.000000	913	0.204292
914	0.000000	914	0.100000
915	0.000000	915	0.000000
916	0.000000	916	3.873700
917	59.628287	917	0.000000
918	0.000000	918	0.000000
919	0.000000	919	0.000000
920	35.760000	920	0.000000
921	0.000000	921	3.873700
922	112.216131	922	0.000000
923	28.800000	923	0.000000
924	18.131713	924	0.000000
925	8.962017	925	0.000000
926	0.000000	926	0.000000
927	23.598347	927	0.000000
928	48.000000	928	0.000000
929	0.000000	929	3.260000
930	55.200000	930	0.000000
931	105.000000	931	0.000000
932	12.085807	932	0.000000
933	70.954762	933	0.000000
934	11.144446	934	0.000000
935	0.000000	935	1.456611
936	51.176471	936	0.000000
937	101.355554	937	0.000000
938	0.000000	938	9.937010
939	510.073323	939	0.000000
940	20.203663	940	0.000000
941	0.750000	941	0.000000
942	1.239893	942	0.000000
943	50.793470	943	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
944	0.000000	944	1.912518
945	10.800000	945	0.000000
946	0.000000	946	0.000000
947	33.798347	947	0.000000
948	0.401653	948	0.000000
949	30.570500	949	0.000000
950	45.000000	950	0.000000
951	204.390000	951	0.000000
952	133.857774	952	0.000000
953	13.606791	953	0.000000
954	32.098783	954	0.000000
955	74.550680	955	0.000000
956	0.000000	956	3.670000
957	0.000000	957	6.887927
958	240.000000	958	0.000000
959	0.000000	959	6.877341
960	0.000000	960	6.847886
961	0.000000	961	1.233249
962	283.847398	962	0.000000
963	0.000000	963	7.077774
964	480.000000	964	0.000000
965	0.000000	965	7.067188
966	3738.896385	966	0.000000
967	0.000000	967	7.024386
968	40.703913	968	0.000000
969	0.000000	969	0.906156
970	81.464136	970	0.000000
971	0.000000	971	0.274967
972	48.102518	972	0.000000
973	173.237005	973	0.000000
974	47.314197	974	0.000000
975	0.000000	975	0.308189
976	51.782920	976	0.000000
977	0.000000	977	0.839231
978	0.000000	978	0.207539
979	0.000000	979	5.768970
980	0.000000	980	0.141742
981	45.000000	981	0.000000
982	1088.957076	982	0.000000
983	17.145532	983	0.000000
984	154.339711	984	0.000000
985	3.757351	985	0.000000
986	37.500000	986	0.000000
987	82.532467	987	0.000000
988	0.000000	988	0.332619
989	0.000000	989	0.266728
990	45.527398	990	0.000000
991	25.736403	991	0.000000
992	272.482368	992	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
993	0.000000	993	5.541093
994	18.622739	994	0.000000
995	80.626023	995	0.000000
996	308.240887	996	0.000000
997	0.000000	997	0.803095
998	0.000000	998	1.425952
999	4.144854	999	0.000000
1000	3.980186	1000	0.000000
1001	0.000000	1001	3.605517
1002	0.900835	1002	0.000000
1003	0.000000	1003	2.488918
1004	0.000000	1004	2.675144
1005	6.115795	1005	0.000000
1006	0.000000	1006	3.703262
1007	0.000000	1007	3.873700
1008	0.000000	1008	4.311110
1009	0.000000	1009	3.721304
1010	0.000000	1010	0.192330
1011	74.159500	1011	0.000000
1012	0.000000	1012	1.165257
1013	1.050416	1013	0.000000
1014	15.302200	1014	0.000000
1015	26.410898	1015	0.000000
1016	41.895120	1016	0.000000
1017	55.200000	1017	0.000000
1018	24.000000	1018	0.000000
1019	0.000000	1019	2.532556
1020	8.072699	1020	0.000000
1021	0.000000	1021	0.274967
1022	22.954987	1022	0.000000
1023	3.000000	1023	0.000000
1024	0.000000	1024	7.327360
1025	480.000000	1025	0.000000
1026	0.000000	1026	7.321983
1027	25.345146	1027	0.000000
1028	0.000000	1028	7.307339
1029	45.527398	1029	0.000000
1030	120.000000	1030	0.000000
1031	480.000000	1031	0.000000
1032	59.628287	1032	0.000000
1033	275.468208	1033	0.000000
1034	1.717713	1034	0.000000
1035	12.354000	1035	0.000000
1036	0.000000	1036	0.264686
1037	3.321600	1037	0.000000
1038	14.272287	1038	0.000000
1039	0.000000	1039	0.105816
1040	0.000000	1040	4.035500
1041	0.000000	1041	3.833800

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Coordenada x	Valor x	Coordenada z	Valor z
1042	13.084740	1042	0.000000
1043	8.389140	1043	0.000000
1044	-0.000000	1044	0.000000
1045	6.150000	1045	0.000000
1046	-0.000000	1046	0.000000
1047	6.839910	1047	0.000000
1048	1.240800	1048	0.000000
1049	0.000000	1049	0.093412
1050	0.000000	1050	0.010866
1051	0.000000	1051	0.119091
1052	3.033958	1052	0.000000
1053	21.930000	1053	0.000000
1054	0.000000	1054	0.407484
1055	0.000000	1055	0.547121
1056	0.000000	1056	0.529289
1057	10.490750	1057	0.000000
1058	10.979080	1058	0.000000
1059	0.000000	1059	0.394967
1060	0.000000	1060	0.310592
1061	48.462000	1061	0.000000
1062	55.114920	1062	0.000000
1063	0.000000	1063	0.783262
1064	0.000000	1064	1.003445
1065	0.000000	1065	0.984437
1066	0.000000	1066	0.449857
1067	0.000000	1067	0.017412
1068	0.000000	1068	0.028783
1069	23.271600	1069	0.000000
1070	16.353750	1070	0.000000
1071	0.000000	1071	0.125515
1072	0.000000	1072	0.128939
1073	0.000000	1073	0.000000
1074	0.000000	1074	0.057748
1075	4.500000	1075	0.000000
1076	0.000000	1076	0.057748
1077	37.926210	1077	0.000000
1078	34.160000	1078	0.000000
1079	3.108748	1079	0.000000
1080	0.373207	1080	0.000000
1081	5.929615	1081	0.000000
1082	4.666966	1082	0.000000
1083	6.399794	1083	0.000000
1084	-0.000000	1084	0.000000
1085	123.000000	1085	0.000000
1086	-0.000000	1086	0.000000
1087	147.000000	1087	0.000000
1088	6.556959	1088	0.000000
1089	29.689074	1089	0.000000
1090	5.656923	1090	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1091	6.148829	1091	0.000000
1092	0.000000	1092	0.424015
1093	793.528127	1093	0.000000
1094	2.155222	1094	0.000000
1095	6.518693	1095	0.000000
1096	0.000000	1096	3.575007
1097	27.025869	1097	0.000000
1098	18.139939	1098	0.000000
1099	0.000000	1099	0.113998
1100	4.756252	1100	0.000000
1101	6.388319	1101	0.000000
1102	0.000000	1102	0.146872
1103	0.000000	1103	5.085646
1104	3.170178	1104	0.000000
1105	125.558291	1105	0.000000
1106	-0.000000	1106	0.000000
1107	27.060000	1107	0.000000
1108	16.063673	1108	0.000000
1109	150.600000	1109	0.000000
1110	-0.000000	1110	0.000000
1111	18.375000	1111	0.000000
1112	5.800308	1112	0.000000
1113	16.109997	1113	0.000000
1114	-0.000000	1114	0.000000
1115	56.349225	1115	0.000000
1116	0.000000	1116	5.012800
1117	2.781631	1117	0.000000
1118	0.000000	1118	0.244478
1119	178.022475	1119	0.000000
1120	2.573789	1120	0.000000
1121	0.000000	1121	0.396452
1122	13.530000	1122	0.000000
1123	7.112203	1123	0.000000
1124	0.000000	1124	0.110644
1125	1.253333	1125	0.000000
1126	0.000000	1126	0.082673
1127	6.909000	1127	0.000000
1128	45.527398	1128	0.000000
1129	0.000000	1129	0.000000
1130	0.000000	1130	0.000000
1131	-0.000000	1131	0.000000
1132	-0.000000	1132	0.000000
1133	0.000000	1133	0.000000
1134	0.000000	1134	0.000000
1135	-0.000000	1135	0.000000
1136	-0.000000	1136	0.000000
1137	0.000000	1137	3.873700
1138	64.800000	1138	0.000000
1139	0.000000	1139	4.200000

Continua na próxima página

Coordenada x	Valor x	Coordenada z	Valor z
1140	89.800000	1140	0.000000
1141	0.000000	1141	3.873700
1142	119.200000	1142	0.000000
1143	0.000000	1143	3.780000
1144	219.200000	1144	0.000000
1145	0.000000	1145	0.308970
1146	25.000000	1146	0.000000
1147	59.900000	1147	0.000000
1148	84.900000	1148	0.000000
1149	0.000000	1149	0.921093
1150	100.000000	1150	0.000000
1151	103.500000	1151	0.000000
1152	203.500000	1152	0.000000
1153	0.000000	1153	3.873700
1154	44.500000	1154	0.000000
1155	0.000000	1155	4.035500
1156	0.000000	1156	4.200000
1157	69.500000	1157	0.000000
1158	0.000000	1158	3.873700
1159	25.000000	1159	0.000000
1160	0.000000	1160	3.833800
1161	0.000000	1161	3.780000
1162	55.000000	1162	0.000000
1163	0.000000	1163	0.683324
1164	25.000000	1164	0.000000
1165	19.000000	1165	0.000000
1166	0.000000	1166	0.374354
1167	44.000000	1167	0.000000
1168	0.000000	1168	0.921093
1169	50.000000	1169	0.000000
1170	1.940853	1170	0.000000
1171	39.759147	1171	0.000000
1172	91.700000	1172	0.000000
1173	5.200000	1173	0.000000
1174	19.800000	1174	0.000000
1175	0.000000	1175	0.420000
1176	19.668208	1176	0.000000
1177	0.000000	1177	0.005000
1178	55.331792	1178	0.000000
1179	0.000000	1179	0.215270
1180	0.000000	1180	0.050000
1181	50.000000	1181	0.000000
1182	0.000000	1182	0.827393
1183	0.000000	1183	0.050000
1184	150.000000	1184	0.000000
1185	0.000000	1185	0.060000
1186	25.000000	1186	0.000000
1187	0.000000	1187	0.470000
1188	0.000000	1188	0.055000

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Coordenada x	Valor x	Coordenada z	Valor z
1189	75.000000	1189	0.000000
1190	0.000000	1190	0.045000
1191	0.000000	1191	0.225270
1192	34.900000	1192	0.000000
1193	15.100000	1193	0.000000
1194	0.000000	1194	0.837393
1195	3.500000	1195	0.000000
1196	196.500000	1196	0.000000
1197	0.000000	1197	0.005000
1198	20.000000	1198	0.000000
1199	0.000000	1199	0.536300
1200	5.800000	1200	0.000000
1201	44.200000	1201	0.000000
1202	0.000000	1202	0.111300
1203	0.000000	1203	0.170270
1204	25.000000	1204	0.000000
1205	0.000000	1205	0.066300
1206	0.000000	1206	0.782393
1207	100.000000	1207	0.000000
1208	0.000000	1208	0.066300
1209	10.000000	1209	0.000000
1210	0.000000	1210	0.071300
1211	0.000000	1211	0.541300
1212	40.000000	1212	0.000000
1213	0.000000	1213	0.076300
1214	0.000000	1214	0.121300
1215	0.000000	1215	0.093970
1216	0.000000	1216	0.000000
1217	25.000000	1217	0.000000
1218	0.000000	1218	0.706093
1219	0.000000	1219	0.000000
1220	100.000000	1220	0.000000
1221	0.000000	1221	0.086500
1222	38.928287	1222	0.000000
1223	11.071713	1223	0.000000
1224	0.000000	1224	0.141700
1225	0.000000	1225	0.373000
1226	0.000000	1226	0.188800
1227	0.000000	1227	0.077500
1228	150.000000	1228	0.000000
1229	0.000000	1229	0.905624
1230	9.000000	1230	0.000000
1231	41.000000	1231	0.000000
1232	0.000000	1232	0.355054
1233	0.000000	1233	1.162693
1234	0.000000	1234	0.116000
1235	0.000000	1235	0.019300
1236	200.000000	1236	0.000000
1237	14.428287	1237	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1238	5.571713	1238	0.000000
1239	0.000000	1239	0.108000
1240	0.000000	1240	0.325200
1241	0.000000	1241	0.095100
1242	25.000000	1242	0.000000
1243	23.298477	1243	0.000000
1244	1.701523	1244	0.000000
1245	0.000000	1245	0.828624
1246	10.000000	1246	0.000000
1247	0.000000	1247	0.096700
1248	0.000000	1248	0.520054
1249	0.000000	1249	0.969693
1250	41.700000	1250	0.000000
1251	8.300000	1251	0.000000
1252	0.000000	1252	0.049000
1253	226.165858	1253	0.000000
1254	0.000000	1254	4.200000
1255	0.000000	1255	3.780000
1256	0.000000	1256	5.556551
1257	75.000000	1257	0.000000
1258	0.996056	1258	0.000000
1259	0.000000	1259	1.531250
1260	0.000000	1260	0.547400
1261	1.087482	1261	0.000000
1262	7.445578	1262	0.000000
1263	0.000000	1263	2.744073
1264	9.404522	1264	0.000000
1265	9.279128	1265	0.000000
1266	1.488498	1266	0.000000
1267	34.859427	1267	0.000000
1268	0.000000	1268	7.809899
1269	-0.000000	1269	0.000000
1270	250.787241	1270	0.000000
1271	0.000000	1271	4.515200
1272	1.333160	1272	0.000000
1273	4.466701	1273	0.000000
1274	8.933402	1274	0.000000
1275	0.000000	1275	1.945200
1276	0.000000	1276	2.995200
1277	0.000000	1277	0.464794
1278	0.000000	1278	3.605097
1279	0.000000	1279	1.154033
1280	0.000000	1280	3.110442
1281	0.000000	1281	0.883029
1282	0.000000	1282	2.005667
1283	0.000000	1283	0.136236
1284	0.000000	1284	1.609275
1285	26.028110	1285	0.000000
1286	0.000000	1286	4.741388

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Coordenada x	Valor x	Coordenada z	Valor z
1287	0.000000	1287	2.040502
1288	0.000000	1288	4.073639
1289	0.000000	1289	1.688243
1290	0.000000	1290	2.993763
1291	0.000000	1291	1.006275
1292	0.000000	1292	2.499237
1293	0.000000	1293	0.846021
1294	0.000000	1294	0.478335
1295	0.000000	1295	0.579809
1296	0.000000	1296	0.356387
1297	0.000000	1297	0.468801
1298	0.000000	1298	1.289351
1299	0.000000	1299	1.413602
1300	26.028110	1300	0.000000
1301	10.457828	1301	0.000000
1302	17.555107	1302	0.000000
1303	0.000000	1303	1.274926
1304	18.653194	1304	0.000000
1305	0.000000	1305	1.761750
1306	3.794378	1306	0.000000
1307	0.000000	1307	0.143637
1308	0.000000	1308	5.388483
1309	1.247397	1309	0.000000
1310	51.758461	1310	0.000000
1311	0.000000	1311	3.240200
1312	4.581299	1312	0.000000
1313	14498.067384	1313	0.000000
1314	13.683895	1314	0.000000
1315	0.000000	1315	9.142374
1316	0.000000	1316	8.165710
1317	0.000000	1317	7.498875
1318	0.000000	1318	7.397903
1319	13.666840	1319	0.000000
1320	-0.000000	1320	0.000000
1321	-0.000000	1321	0.000000
1322	0.000000	1322	0.000000
1323	0.000000	1323	9.528192
1324	0.000000	1324	5.460000
1325	-0.000000	1325	0.000000
1326	0.000000	1326	3.181783
1327	-0.000000	1327	0.000000
1328	49.229795	1328	0.000000
1329	-0.000000	1329	0.000000
1330	-0.000000	1330	0.000000
1331	5.938359	1331	0.000000
1332	49.171721	1332	0.000000
1333	0.000000	1333	0.027407
1334	0.000000	1334	0.167851
1335	0.000000	1335	0.495904

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Coordenada x	Valor x	Coordenada z	Valor z
1336	0.000000	1336	1.098288
1337	3.921328	1337	0.000000
1338	149.915938	1338	0.000000
1339	1.120259	1339	0.000000
1340	0.000000	1340	2.351260
1341	0.000000	1341	33.716515
1342	0.000000	1342	9.861265
1343	1.958944	1343	0.000000
1344	0.000000	1344	1.937567
1345	0.000000	1345	1.848617
1346	4.138470	1346	0.000000
1347	4.357428	1347	0.000000
1348	0.000000	1348	5.178483
1349	5.127538	1349	0.000000
1350	0.000000	1350	3.654304
1351	0.000000	1351	31.171082
1352	0.000000	1352	4.620000
1353	9.682457	1353	0.000000
1354	13072.353014	1354	0.000000
1355	0.000000	1355	19.876895
1356	13971.874096	1356	0.000000
1357	599.663753	1357	0.000000
1358	0.565331	1358	0.000000
1359	0.000000	1359	2.949462
1360	38.081820	1360	0.000000
1361	-0.000000	1361	0.000000
1362	0.000000	1362	0.709794
1363	131.346806	1363	0.000000
1364	701.825900	1364	0.000000
1365	30.000000	1365	0.000000
1366	393.000000	1366	0.000000
1367	1689.843209	1367	0.000000
1368	1.952108	1368	0.000000
1369	0.000000	1369	0.245000
1370	0.000000	1370	0.388637
1371	0.000000	1371	0.100000

3 Variáveis Duais (Multiplicadores de Lagrange)

Tabela 2: Variáveis duais do problema scfxm3

Coordenada y	Valor y
1	-2.670000
2	-2.183235
3	-4.226195
4	-3.297607
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Coordenada y	Valor y
5	-0.126024
6	-4.803333
7	-4.877187
8	-1.383789
9	-5.392240
10	-3.873700
11	-3.873700
12	-3.873700
13	-3.873700
14	-3.873700
15	-3.873700
16	-5.812889
17	-7.772030
18	-4.814296
19	-2.670000
20	-4.000000
21	-3.703108
22	-0.136437
23	-4.997187
24	-3.873700
25	-0.000000
26	-1.361877
27	-0.230000
28	-0.001100
29	0.286678
30	-0.000000
31	-0.000000
32	-3.776682
33	-8.950000
34	-6.780000
35	-8.682900
36	-0.000000
37	-0.000000
38	-0.000000
39	-0.000000
40	-0.000000
41	-3.873700
42	-4.345453
43	-0.000000
44	-0.000000
45	-0.000000
46	-0.000000
47	0.702900
48	-0.085042
49	-0.172326
50	-0.000000
51	-0.049695
52	-0.147956
53	-0.000000

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Coordenada y	Valor y
54	-3.873700
55	-0.000000
56	-0.000000
57	-0.000000
58	-0.000000
59	-0.000000
60	-0.000000
61	3.873700
62	-0.000000
63	-0.000000
64	-0.000000
65	1.634098
66	0.159185
67	-0.000000
68	2.670000
69	-0.000000
70	-2.117187
71	0.099070
72	-4.530738
73	-5.009398
74	-4.761754
75	-25.000000
76	-4.699265
77	0.112870
78	-4.272389
79	-5.099070
80	0.112870
81	-2.285806
82	-4.769677
83	-3.432862
84	-4.863763
85	-0.000000
86	-0.000000
87	-0.000000
88	-0.000000
89	-0.000000
90	1.000000
91	1.000000
92	1.000000
93	-4.413577
94	-3.575760
95	-5.547842
96	-0.000000
97	5.000000
98	5.863474
99	5.565649
100	3.873700
101	3.873700
102	1.000000
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Coordenada y	Valor y
103	1.000000
104	1.000000
105	-3.447761
106	-2.273799
107	-2.773338
108	0.120000
109	-0.290373
110	-3.253151
111	-4.765244
112	-4.273592
113	-4.422521
114	-4.035500
115	-4.035500
116	-3.663647
117	-3.748734
118	-3.884015
119	-4.010952
120	-4.027915
121	-4.052581
122	-3.695760
123	-4.533577
124	-3.447761
125	-4.280907
126	-4.463606
127	-4.007844
128	-4.007844
129	-0.176181
130	-5.150209
131	-5.111039
132	-5.021757
133	-3.663647
134	-3.755390
135	-3.663647
136	-3.824478
137	-3.768346
138	-0.000000
139	0.381597
140	4.028586
141	-0.000000
142	3.663647
143	-0.000000
144	-0.000000
145	-0.000000
146	-0.003926
147	-0.003312
148	-0.093426
149	-0.095348
150	-0.065267
151	-0.041428

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Coordenada y	Valor y
152	-0.094931
153	-0.068678
154	-0.000000
155	-3.663647
156	-3.876862
157	-0.225875
158	-0.886977
159	-0.000000
160	-0.000000
161	-0.000000
162	-3.447761
163	0.304015
164	-2.310000
165	-0.120000
166	-2.885978
167	-3.270992
168	-4.251747
169	-4.372387
170	-1.000000
171	-0.000000
172	-0.000000
173	-0.000000
174	-0.000000
175	5.174674
176	4.035500
177	3.833800
178	4.620000
179	-5.000000
180	5.863474
181	5.565649
182	3.873700
183	3.873700
184	-1.000000
185	5.904434
186	4.856300
187	4.016300
188	4.016300
189	-7.085167
190	-5.601260
191	-0.000000
192	-0.000000
193	-5.954434
194	-4.906300
195	-4.016300
196	-4.021300
197	-0.286300
198	-0.286300
199	-4.016300
200	-4.021300

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Coordenada y	Valor y
201	-0.141703
202	-0.098126
203	-7.794835
204	-6.987000
205	-0.000000
206	-0.000000
207	-5.305974
208	-4.848000
209	-4.182200
210	-4.096100
211	-0.131300
212	-0.228000
213	-4.182200
214	-4.096100
215	-0.262016
216	-0.236700
217	5.954434
218	4.906300
219	4.016300
220	4.021300
221	5.954434
222	4.906300
223	4.016300
224	4.021300
225	5.934774
226	4.906300
227	3.945000
228	3.945000
229	5.305974
230	4.732000
231	4.182200
232	3.907300
233	5.305974
234	4.848000
235	4.182200
236	4.096100
237	-5.668134
238	-4.620000
239	-5.174674
240	-4.620000
241	5.000000
242	5.668134
243	4.620000
244	6.511419
245	3.780000
246	-0.350000
247	-5.104568
248	-1.890000
249	-11.821899

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Coordenada y	Valor y
250	-3.255000
251	-1.513750
252	-0.649035
253	-0.212835
254	-0.123673
255	-0.000000
256	-0.000000
257	-0.061744
258	-0.000000
259	-0.000000
260	-0.003735
261	-7.568174
262	-5.462838
263	1.000000
264	-0.000000
265	-0.000000
266	-0.000000
267	5.000000
268	-11.300000
269	5.000000
270	1.000000
271	1.000000
272	-0.000000
273	-0.000000
274	-6.000000
275	-6.993434
276	-6.993434
277	-6.993434
278	-0.000000
279	-6.511419
280	-3.780000
281	-0.000000
282	-0.000000
283	-2.479292
284	-4.012236
285	-3.753450
286	-0.000000
287	-23.316409
288	-14.500000
289	-40.000000
290	-4.455574
291	-9.802194
292	-5.515200
293	-2.694928
294	-0.000000
295	-3.165231
296	-2.522241
297	-0.350000
298	-153.632250

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Coordenada y	Valor y
299	-0.000000
300	-0.000000
301	-0.000000
302	-0.000000
303	-0.000000
304	3.653253
305	-0.000000
306	-0.000000
307	-0.455522
308	-0.000000
309	-0.107825
310	-0.000000
311	-0.389698
312	-0.227761
313	-0.000000
314	-0.000000
315	-0.227761
316	-0.000000
317	-0.000000
318	-0.185418
319	-0.000000
320	-0.000000
321	-36.769833
322	-0.000000
323	-0.000000
324	-0.033065
325	-0.000000
326	-0.000000
327	-3.780000
328	-0.000000
329	-0.000000
330	-0.000000
331	-1.763844
332	-2.311419
333	-0.208134
334	-0.092073
335	-0.083253
336	-0.293809
337	-4.852797
338	-0.192330
339	-5.283055
340	-3.873700
341	-3.873700
342	-3.873700
343	-3.873700
344	-3.873700
345	-3.873700
346	-5.786218
347	-3.776790

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Coordenada y	Valor y
348	-4.088770
349	-1.763844
350	-4.000000
351	-3.026113
352	-0.090132
353	-4.139669
354	-3.873700
355	-4.669349
356	-0.961169
357	-0.121607
358	-0.014996
359	-0.421364
360	-0.000000
361	-0.000000
362	-3.758611
363	-8.950000
364	-6.780000
365	-8.422332
366	-0.000000
367	-0.000000
368	-0.000000
369	-0.000000
370	-0.000000
371	-3.873700
372	-3.721304
373	-0.000000
374	-3.804617
375	-0.004072
376	-0.000000
377	0.442332
378	-0.074344
379	-0.178339
380	-0.000000
381	-0.049695
382	-0.147317
383	-0.000000
384	-3.873700
385	-0.000000
386	-0.000000
387	-0.000000
388	-0.000000
389	-0.000000
390	-0.000000
391	3.873700
392	-0.000000
393	-0.000000
394	-0.000000
395	0.951110
396	0.194494

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Coordenada y	Valor y
397	-0.000000
398	1.763844
399	-0.000000
400	-1.259669
401	0.074644
402	-4.507545
403	-4.984722
404	-4.036478
405	-25.000000
406	-4.011985
407	0.088444
408	-4.239071
409	-5.074644
410	0.088444
411	-2.532556
412	-0.000000
413	-0.000000
414	-0.274967
415	-0.000000
416	-0.000000
417	-0.000000
418	-0.000000
419	-0.000000
420	1.000000
421	1.000000
422	1.000000
423	-3.703262
424	-2.870518
425	-5.340506
426	-0.000000
427	5.000000
428	5.768970
429	5.541093
430	3.873700
431	3.873700
432	1.000000
433	1.000000
434	1.000000
435	-3.447761
436	-2.273799
437	-2.773338
438	0.120000
439	-0.290373
440	-3.253151
441	-4.837439
442	-4.266647
443	-4.412160
444	-4.035500
445	-4.035500

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Coordenada y	Valor y
446	-3.803389
447	-4.024437
448	-3.886587
449	-4.043445
450	-3.974525
451	-4.010345
452	-3.386970
453	-3.823262
454	-3.447761
455	-4.280907
456	-4.463606
457	-3.893960
458	-4.124952
459	-0.176181
460	-5.150209
461	-5.111039
462	-5.021757
463	-3.522193
464	-3.650455
465	-3.489857
466	-3.964903
467	-3.725356
468	-0.000000
469	0.108052
470	4.000115
471	-0.000000
472	3.447761
473	-0.000000
474	-0.000000
475	-0.011759
476	-0.011110
477	-0.000000
478	-0.121713
479	-0.090398
480	-0.037017
481	-0.066005
482	-0.094931
483	-0.068678
484	-0.000000
485	-3.447761
486	-3.965433
487	-0.204371
488	-0.809699
489	-0.000000
490	-0.000000
491	-0.000000
492	-3.447761
493	0.304015
494	-2.310000

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Coordenada y	Valor y
495	-0.120000
496	-2.885978
497	-3.270992
498	-4.272650
499	-4.400317
500	-1.000000
501	-0.000000
502	-0.000000
503	-0.000000
504	-0.000000
505	5.085646
506	4.035500
507	3.833800
508	4.620000
509	-5.000000
510	5.768970
511	5.541093
512	3.873700
513	3.873700
514	-1.000000
515	5.904434
516	4.856300
517	4.016300
518	4.016300
519	-7.085167
520	-5.601260
521	-0.000000
522	-0.000000
523	-5.916570
524	-4.906300
525	-4.016300
526	-4.021300
527	-0.248436
528	-0.286300
529	-4.016300
530	-4.021300
531	-0.141703
532	-0.098126
533	-7.661294
534	-6.987000
535	-0.000000
536	-0.000000
537	-5.216946
538	-4.848000
539	-4.182200
540	-4.096100
541	-0.131300
542	-0.228000
543	-4.182200

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Coordenada y	Valor y
544	-4.096100
545	-0.257565
546	-0.236700
547	5.916570
548	4.906300
549	4.016300
550	4.021300
551	5.916570
552	4.906300
553	4.016300
554	4.021300
555	5.840270
556	4.906300
557	3.945000
558	3.945000
559	5.216946
560	4.732000
561	4.182200
562	3.907300
563	5.216946
564	4.848000
565	4.182200
566	4.096100
567	-5.668134
568	-4.620000
569	-5.085646
570	-4.620000
571	5.000000
572	5.668134
573	4.620000
574	6.511419
575	3.780000
576	-0.350000
577	-5.104568
578	-1.890000
579	-11.821899
580	-3.255000
581	-1.513750
582	-0.649035
583	-0.212835
584	-0.123673
585	-0.000000
586	-0.000000
587	-0.061744
588	-0.000000
589	-0.000000
590	-0.003735
591	-7.568174
592	-5.462838

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Coordenada y	Valor y
593	1.000000
594	-0.000000
595	-0.000000
596	-0.000000
597	5.000000
598	-11.300000
599	5.000000
600	1.000000
601	1.000000
602	-0.000000
603	-0.000000
604	-6.000000
605	-6.993434
606	-6.993434
607	-6.993434
608	-0.000000
609	-6.511419
610	-3.780000
611	-0.000000
612	-0.000000
613	-2.479292
614	-4.012236
615	-3.753450
616	-0.000000
617	-23.316409
618	-14.500000
619	-40.000000
620	-4.455574
621	-9.802194
622	-5.515200
623	-2.694928
624	-0.000000
625	-3.165231
626	-2.522241
627	-0.350000
628	-153.632250
629	-0.000000
630	-0.000000
631	-0.000000
632	-0.000000
633	-0.000000
634	3.653253
635	-0.000000
636	-0.000000
637	-0.455522
638	-0.000000
639	-0.107825
640	-0.000000
641	-0.389698

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Coordenada y	Valor y
642	-0.227761
643	-0.000000
644	-0.000000
645	-0.227761
646	-0.000000
647	-0.000000
648	-0.185418
649	-0.000000
650	-0.000000
651	-36.769833
652	-0.000000
653	-0.000000
654	-0.000000
655	-0.000000
656	-0.000000
657	-3.780000
658	-0.000000
659	-0.000000
660	-0.000000
661	-1.763844
662	-2.311419
663	-0.208134
664	-0.092073
665	-0.083253
666	-0.293809
667	-4.852797
668	-0.192330
669	-5.283055
670	-3.873700
671	-3.873700
672	-3.873700
673	-3.873700
674	-3.873700
675	-3.873700
676	-5.786218
677	-3.776790
678	-4.088770
679	-1.763844
680	-4.000000
681	-3.026113
682	-0.090132
683	-4.139669
684	-3.873700
685	-4.669349
686	-0.961169
687	-0.121607
688	-0.014996
689	-0.421364
690	-0.000000
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Coordenada y	Valor y
691	-0.000000
692	-3.758611
693	-8.950000
694	-6.780000
695	-8.422332
696	-0.000000
697	-0.000000
698	-0.000000
699	-0.000000
700	-0.000000
701	-3.873700
702	-3.721304
703	-0.000000
704	-3.804617
705	-0.004072
706	-0.000000
707	0.442332
708	-0.074344
709	-0.178339
710	-0.000000
711	-0.049695
712	-0.147317
713	-0.000000
714	-3.873700
715	-0.000000
716	-0.000000
717	-0.000000
718	-0.000000
719	-0.000000
720	-0.000000
721	3.873700
722	-0.000000
723	-0.000000
724	-0.000000
725	0.951110
726	0.194494
727	-0.000000
728	1.763844
729	-0.000000
730	-1.259669
731	0.074644
732	-4.507545
733	-4.984722
734	-4.036478
735	-25.000000
736	-4.011985
737	0.088444
738	-4.239071
739	-5.074644

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Coordenada y	Valor y
740	0.088444
741	-2.532556
742	-0.000000
743	-0.000000
744	-0.274967
745	-0.000000
746	-0.000000
747	-0.000000
748	-0.000000
749	-0.000000
750	1.000000
751	1.000000
752	1.000000
753	-3.703262
754	-2.870518
755	-5.340506
756	-0.000000
757	5.000000
758	5.768970
759	5.541093
760	3.873700
761	3.873700
762	1.000000
763	1.000000
764	1.000000
765	-3.447761
766	-2.273799
767	-2.773338
768	0.120000
769	-0.290373
770	-3.253151
771	-4.837439
772	-4.266647
773	-4.412160
774	-4.035500
775	-4.035500
776	-3.803389
777	-4.024437
778	-3.886587
779	-4.043445
780	-3.974525
781	-4.010345
782	-3.386970
783	-3.823262
784	-3.447761
785	-4.280907
786	-4.463606
787	-3.893960
788	-4.124952
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Coordenada y	Valor y
789	-0.176181
790	-5.150209
791	-5.111039
792	-5.021757
793	-3.522193
794	-3.650455
795	-3.489857
796	-3.964903
797	-3.725356
798	-0.000000
799	0.108052
800	4.000115
801	-0.000000
802	3.447761
803	-0.000000
804	-0.000000
805	-0.011759
806	-0.011110
807	-0.000000
808	-0.121713
809	-0.090398
810	-0.037017
811	-0.066005
812	-0.094931
813	-0.068678
814	-0.000000
815	-3.447761
816	-3.965433
817	-0.204371
818	-0.809699
819	-0.000000
820	-0.000000
821	-0.000000
822	-3.447761
823	0.304015
824	-2.310000
825	-0.120000
826	-2.885978
827	-3.270992
828	-4.272650
829	-4.400317
830	-1.000000
831	-0.000000
832	-0.000000
833	-0.000000
834	-0.000000
835	5.085646
836	4.035500
837	3.833800

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Coordenada y	Valor y
838	4.620000
839	-5.000000
840	5.768970
841	5.541093
842	3.873700
843	3.873700
844	-1.000000
845	5.696300
846	4.856300
847	4.016300
848	4.016300
849	-6.825000
850	-5.601260
851	-0.000000
852	-0.000000
853	-5.746300
854	-4.906300
855	-4.016300
856	-4.021300
857	-0.286300
858	-0.286300
859	-4.016300
860	-4.021300
861	-0.136500
862	-0.098126
863	-7.661294
864	-6.987000
865	-0.000000
866	-0.000000
867	-5.216946
868	-4.848000
869	-4.182200
870	-4.096100
871	-0.131300
872	-0.228000
873	-4.182200
874	-4.096100
875	-0.257565
876	-0.236700
877	5.746300
878	4.906300
879	4.016300
880	4.021300
881	5.746300
882	4.906300
883	4.016300
884	4.021300
885	5.746300
886	4.906300
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Coordenada y	Valor y
887	3.945000
888	3.945000
889	5.216946
890	4.732000
891	4.182200
892	3.907300
893	5.216946
894	4.848000
895	4.182200
896	4.096100
897	-5.460000
898	-4.620000
899	-5.085646
900	-4.620000
901	5.000000
902	5.460000
903	4.620000
904	4.200000
905	3.780000
906	-0.350000
907	-6.043771
908	-1.890000
909	-15.369474
910	-3.255000
911	-1.513750
912	-0.458060
913	-0.382761
914	-0.168185
915	-0.000000
916	-0.000000
917	-0.083967
918	-0.000000
919	-0.000000
920	-0.000000
921	-13.800263
922	-0.840000
923	1.000000
924	-0.000000
925	-0.000000
926	-0.000000
927	5.000000
928	-11.300000
929	1.818217
930	1.000000
931	1.000000
932	-0.000000
933	-0.000000
934	-6.000000
935	-7.744073

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Coordenada y	Valor y
936	-7.744073
937	-7.744073
938	-0.000000
939	-4.200000
940	-3.780000
941	-2.940000
942	-0.000000
943	-2.663637
944	-5.132064
945	-3.753450
946	-0.000000
947	-23.311111
948	-14.500000
949	-40.000000
950	-6.779413
951	-10.229212
952	-5.515200
953	-2.984794
954	-0.000000
955	-3.980209
956	-2.520000
957	-0.350000
958	-182.835001
959	-0.000000
960	-0.000000
961	-0.000000
962	-0.000000
963	-0.000000
964	3.570000
965	-0.000000
966	-0.000000
967	-0.792642
968	-0.000000
969	-0.580686
970	-0.236617
971	-0.743674
972	-0.396321
973	-0.000000
974	-0.000000
975	-0.396321
976	-0.000000
977	-0.000000
978	-0.252152
979	-0.000000
980	-0.000000
981	-69.176657
982	-0.000000
983	-0.000000
984	-0.000000

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Coordenada y	Valor y
985	-0.000000
986	-0.000000
987	-3.780000
988	-0.000000
989	-0.000000
990	-0.000000

4 Observações

- O solver HiGHS foi configurado com o método IPM (Interior Point Method).
- Este arquivo contém a solução detalhada para o problema scfxm3.
- As variáveis duais representam os multiplicadores de Lagrange das restrições.
- Os custos reduzidos (z) indicam o impacto de forçar variáveis não-básicas na base.