

# Solução do Problema modszk1 - Solver HiGHS

Análise Computacional

17 de setembro de 2025

## 1 Informações do Problema

### Informações do Problema:

- Nome: modszk1
- Número de Variáveis: 1620
- Número de Restrições: 687
- Inviabilidade Primal: 1.819e-12
- Inviabilidade Dual: 0.000e+00
- Valor Primal: 3.206e+02
- Valor Dual: 3.206e+02
- Gap: 3.672e-16
- Número de Iterações: 20

## 2 Variáveis Primais e Custos Reduzidos

Tabela 1: Variáveis primais e custos reduzidos do problema modszk1

Coordenada x	Valor x	Coordenada z	Valor z
1	6.717802	1	0.000000
2	0.000000	2	2.421680
3	0.000000	3	1.810946
4	0.000000	4	0.053614
5	1.290654	5	0.000000
6	0.000000	6	1.367240
7	1.477284	7	0.000000
8	0.000000	8	0.943520
9	0.000000	9	0.452244
10	0.000000	10	0.918176
11	0.000000	11	0.410882
12	0.000000	12	0.720758

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Coordenada x	Valor x	Coordenada z	Valor z
13	0.000000	13	2.408260
14	3.832691	14	0.000000
15	0.000000	15	0.200181
16	0.000000	16	1.633619
17	0.000000	17	2.190830
18	0.000000	18	1.216470
19	0.000000	19	3.241020
20	5.781981	20	0.000000
21	0.000000	21	0.767140
22	0.701619	22	0.000000
23	0.000000	23	0.373489
24	0.000000	24	0.348011
25	0.000000	25	0.566124
26	0.000000	26	0.470916
27	0.000000	27	0.744750
28	0.000000	28	0.696470
29	41286.882198	29	0.000000
30	940.515176	30	0.000000
31	0.000000	31	54.670588
32	0.000000	32	51.644532
33	2626.671445	33	0.000000
34	0.000000	34	20.875587
35	0.000000	35	17.187753
36	1171.308848	36	0.000000
37	0.000000	37	43.426176
38	0.000000	38	41.949044
39	940.515176	39	0.000000
40	0.000000	40	53.730407
41	0.000000	41	52.584713
42	703.528473	42	0.000000
43	0.000000	43	69.773626
44	0.000000	44	72.312194
45	1095.340985	45	0.000000
46	0.000000	46	42.996655
47	0.000000	47	48.277545
48	345.571204	48	0.000000
49	0.000000	49	144.673385
50	0.000000	50	144.762215
51	149.871382	51	0.000000
52	0.000000	52	329.523970
53	0.000000	53	338.478630
54	1060.247135	54	0.000000
55	0.000000	55	44.827735
56	0.000000	56	49.467405
57	1356.274080	57	0.000000
58	0.000000	58	36.472079
59	0.000000	59	37.247061
60	807.158547	60	0.000000
61	0.000000	61	61.967845

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Coordenada x	Valor x	Coordenada z	Valor z
62	0.000000	62	61.932555
63	8131.451449	63	0.000000
64	0.000000	64	8.864380
65	0.000000	65	3.431660
66	26172.580363	66	0.000000
67	12608.600955	67	0.000000
68	0.000000	68	5.335754
69	0.000000	69	2.594026
70	617.651758	70	0.000000
71	0.000000	71	82.290104
72	0.000000	72	79.548376
73	269.190472	73	0.000000
74	0.000000	74	32.250314
75	0.000000	75	29.508586
76	1618.858651	76	0.000000
77	0.000000	77	187.175364
78	0.000000	78	184.433636
79	20255.550445	79	0.000000
80	25593.772562	80	0.000000
81	2593.641940	81	0.000000
82	0.000000	82	19.691064
83	0.000000	83	18.856476
84	101.385463	84	0.000000
85	0.000000	85	463.572547
86	0.000000	86	522.620653
87	1805.408218	87	0.000000
88	-0.000000	88	0.000000
89	0.000000	89	55.377120
90	254.747511	90	0.000000
91	0.000000	91	167.946570
92	0.000000	92	224.518030
93	5379.308281	93	0.000000
94	7437.174452	94	0.000000
95	2102.328042	95	0.000000
96	0.000000	96	1.236166
97	0.000000	97	46.319474
98	97.884394	98	0.000000
99	0.000000	99	495.555849
100	0.000000	100	525.894551
101	148.466406	101	0.000000
102	0.000000	102	326.637540
103	0.000000	103	346.763060
104	731.126623	104	0.000000
105	0.000000	105	53.424600
106	0.000000	106	83.318180
107	73.476365	107	0.000000
108	0.000000	108	667.313618
109	0.000000	109	693.230582
110	206.553730	110	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
111	0.000000	111	230.624827
112	0.000000	112	253.402173
113	97.085509	113	0.000000
114	0.000000	114	480.240008
115	0.000000	115	549.625992
116	603.872707	116	0.000000
117	0.000000	117	0.000000
118	0.000000	118	165.562920
119	3373.114538	119	0.000000
120	7922.014463	120	0.000000
121	1.306115	121	0.000000
122	0.000000	122	1.765120
123	15693.109636	123	0.000000
124	53631.800000	124	0.000000
125	443.534986	125	0.000000
126	0.000000	126	114.201828
127	0.000000	127	111.175772
128	633.391558	128	0.000000
129	0.000000	129	80.795437
130	0.000000	130	77.107603
131	376.495236	131	0.000000
132	0.000000	132	133.540666
133	0.000000	133	132.063534
134	356.115152	134	0.000000
135	0.000000	135	139.140716
136	0.000000	136	141.679284
137	216.672472	137	0.000000
138	0.000000	138	228.201165
139	0.000000	139	232.840835
140	934.802274	140	0.000000
141	0.000000	141	53.105609
142	0.000000	142	53.880591
143	501.993648	143	0.000000
144	0.000000	144	99.579575
145	0.000000	145	99.544285
146	2932.050506	146	0.000000
147	0.000000	147	19.770730
148	0.000000	148	14.338010
149	42990.714562	149	0.000000
150	5936.503942	150	0.000000
151	0.000000	151	7.596980
152	0.000000	152	9.248540
153	3205.036368	153	0.000000
154	0.000000	154	14.774360
155	0.000000	155	16.425920
156	1459.857596	156	0.000000
157	0.000000	157	1255.455220
158	0.000000	158	1257.106780
159	39.687532	159	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
160	0.000000	160	33.423140
161	0.000000	161	35.074700
162	7186.747991	162	0.000000
163	9931.404057	163	0.000000
164	1504.908308	164	0.000000
165	0.000000	165	33.420396
166	0.000000	166	33.033624
167	537.538199	167	0.000000
168	0.000000	168	4.775017
169	0.000000	169	181.271483
170	575.446839	170	0.000000
171	0.000000	171	0.000000
172	0.000000	172	173.792140
173	79.609649	173	0.000000
174	0.000000	174	543.137149
175	0.000000	175	713.144251
176	154.403592	176	0.000000
177	0.000000	177	236.340960
178	0.000000	178	411.327440
179	7454.250286	179	0.000000
180	7454.250286	180	0.000000
181	857.036164	181	0.000000
182	0.000000	182	51.166337
183	0.000000	183	65.492543
184	73.482281	184	0.000000
185	0.000000	185	593.328770
186	0.000000	186	767.215430
187	544.397942	187	0.000000
188	-0.000000	188	0.000000
189	0.000000	189	183.654720
190	70.988305	190	0.000000
191	0.000000	191	606.353235
192	0.000000	192	802.097365
193	58.989799	193	0.000000
194	0.000000	194	687.795570
195	0.000000	195	1007.119630
196	36568.356124	196	0.000000
197	36568.356124	197	0.000000
198	0.000000	198	0.152248
199	0.000000	199	0.871772
200	43700.395943	200	0.000000
201	73138.709346	201	0.000000
202	10319.871889	202	0.000000
203	0.000000	203	6.357848
204	0.000000	204	3.331792
205	3389.979178	205	0.000000
206	0.000000	206	13.840871
207	0.000000	207	15.659389
208	266.956289	208	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
209	0.000000	209	187.838747
210	0.000000	210	186.693053
211	2665.905956	211	0.000000
212	0.000000	212	16.114945
213	0.000000	213	21.395835
214	421.278966	214	0.000000
215	0.000000	215	118.551385
216	0.000000	216	118.640215
217	165.293483	217	0.000000
218	0.000000	218	297.454970
219	0.000000	219	306.409630
220	503.925707	220	0.000000
221	0.000000	221	96.886515
222	0.000000	222	101.526185
223	8643.532671	223	0.000000
224	0.000000	224	5.397199
225	0.000000	225	6.172181
226	8797.855347	226	0.000000
227	0.000000	227	8.399530
228	0.000000	228	2.966810
229	58571.672606	229	0.000000
230	10745.539177	230	0.000000
231	0.000000	231	6.441766
232	0.000000	232	2.864014
233	3243.701759	233	0.000000
234	0.000000	234	17.201946
235	0.000000	235	13.624194
236	81.915354	236	0.000000
237	0.000000	237	102.595276
238	0.000000	238	99.017524
239	495.880449	239	0.000000
240	0.000000	240	611.544976
241	0.000000	241	607.967224
242	37464.026122	242	0.000000
243	53127.533086	243	0.000000
244	2244.626990	244	0.000000
245	0.000000	245	21.582573
246	0.000000	246	22.960867
247	1144.827104	247	0.000000
248	0.000000	248	87.336240
249	0.022446	249	0.000000
250	333.439339	250	0.000000
251	0.000000	251	195.428613
252	0.000000	252	104.421387
253	75.284789	253	0.000000
254	0.000000	254	706.697449
255	0.000000	255	621.323751
256	0.000000	256	0.000000
257	14895.297560	257	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
258	12312.901718	258	0.000000
259	0.000000	259	5.899193
260	0.000000	260	2.222307
261	9731.009357	261	0.000000
262	0.000000	262	10.276440
263	0.123129	263	0.000000
264	486.236489	264	0.000000
265	0.000000	265	102.793796
266	0.000000	266	102.840604
267	131.624919	267	0.000000
268	0.000000	268	381.904105
269	0.000000	269	377.974295
270	98.995730	270	0.000000
271	0.000000	271	498.982391
272	0.000000	272	511.118609
273	9731.009357	273	0.000000
274	9731.009357	274	0.000000
275	0.276970	275	0.000000
276	0.000000	276	1.022860
277	20011.176260	277	0.000000
278	105983.522716	278	0.000000
279	3639.474170	279	0.000000
280	0.000000	280	15.252688
281	0.000000	281	12.226632
282	1958.575500	282	0.000000
283	0.000000	283	24.615271
284	0.000000	284	26.433789
285	7286.367187	285	0.000000
286	0.000000	286	8.706397
287	0.000000	287	5.018563
288	20272.528225	288	0.000000
289	0.000000	289	3.204896
290	0.000000	290	1.727764
291	590.328222	291	0.000000
292	0.000000	292	85.304257
293	0.000000	293	84.158563
294	662.397017	294	0.000000
295	0.000000	295	74.259416
296	0.000000	296	76.797984
297	999.424619	297	0.000000
298	0.000000	298	47.700175
299	0.000000	299	52.339845
300	1754.027301	300	0.000000
301	0.000000	301	28.122029
302	0.000000	302	28.897011
303	1196.553971	303	0.000000
304	0.000000	304	41.816675
305	0.000000	305	41.781385
306	703.730591	306	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
307	0.000000	307	70.967258
308	0.000000	308	71.078202
309	14631.025311	309	0.000000
310	0.000000	310	6.133760
311	0.000000	311	0.701040
312	76899.524412	312	0.000000
313	686.773227	313	0.000000
314	0.000000	314	73.484268
315	0.000000	315	72.076132
316	1797.480545	316	0.000000
317	0.000000	317	28.528218
318	0.000000	318	27.120082
319	20042.543981	319	0.000000
320	0.000000	320	8.329508
321	0.000000	321	6.921372
322	6557.200550	322	0.000000
323	0.000000	323	3.198708
324	0.000000	324	1.790572
325	55315.736346	325	0.000000
326	94724.684418	326	0.000000
327	12649.133436	327	0.000000
328	0.000000	328	2.051788
329	0.000000	329	5.853972
330	1606.060472	330	0.000000
331	0.000000	331	15.813130
332	0.000000	332	46.453370
333	3369.982130	333	0.000000
334	0.000000	334	0.000000
335	0.000000	335	29.673580
336	1325.249710	336	0.000000
337	0.000000	337	24.245533
338	0.000000	338	51.214787
339	146.350474	339	0.000000
340	0.000000	340	329.937992
341	0.000000	341	353.122208
342	2523.375629	342	0.000000
343	0.000000	343	5.053776
344	0.000000	344	34.576864
345	1015.978398	345	0.000000
346	0.000000	346	16.320916
347	0.000000	347	82.104284
348	11985.501894	348	0.000000
349	12500.523461	349	0.000000
350	16771.892470	350	0.000000
351	0.000000	351	0.111813
352	0.000000	352	5.850507
353	1556.767059	353	0.000000
354	0.000000	354	32.070269
355	0.000000	355	32.164051

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Coordenada x	Valor x	Coordenada z	Valor z
356	1016.208965	356	0.000000
357	0.000000	357	54.415357
358	0.000000	358	43.990463
359	9884.907605	359	0.000000
360	0.000000	360	10.119400
361	2.908562	361	0.000000
362	870.461219	362	0.000000
363	0.000000	363	57.613930
364	0.000000	364	57.262590
365	2034.765994	365	0.000000
366	0.000000	366	26.790338
367	0.000000	367	22.356962
368	565.212776	368	0.000000
369	0.000000	369	92.182407
370	0.000000	370	84.714833
371	736.061021	371	0.000000
372	2.908562	372	0.000000
373	0.000000	373	135.318000
374	13762.782958	374	0.000000
375	13762.782958	375	0.000000
376	3.053557	376	0.000000
377	0.000000	377	0.756180
378	11258.838297	378	0.000000
379	72970.400000	379	0.000000
380	1373.302928	380	0.000000
381	0.000000	381	38.260527
382	0.000000	382	34.572693
383	11143.309784	383	0.000000
384	0.000000	384	5.225606
385	0.000000	385	3.748474
386	979.262768	386	0.000000
387	0.000000	387	51.645367
388	0.000000	388	50.499673
389	1327.331576	389	0.000000
390	0.000000	390	36.398336
391	0.000000	391	38.936904
392	1414.166352	392	0.000000
393	0.000000	393	32.710235
394	0.000000	394	37.991125
395	593.979056	395	0.000000
396	0.000000	396	79.669420
397	0.000000	397	88.624080
398	1632.347848	398	0.000000
399	0.000000	399	28.309915
400	0.000000	400	32.949585
401	1068.286656	401	0.000000
402	0.000000	402	46.747858
403	0.000000	403	46.858802
404	12290.404472	404	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
405	0.000000	405	6.784510
406	0.000000	406	1.351790
407	10592.383264	407	0.000000
408	1289.386968	408	0.000000
409	0.000000	409	39.297761
410	0.000000	410	38.269719
411	25295.918864	411	0.000000
412	0.000000	412	2.490621
413	0.000000	413	1.462579
414	10314.366040	414	0.000000
415	0.000000	415	2.476491
416	0.000000	416	1.448449
417	25478.344864	417	0.000000
418	0.000000	418	5.361611
419	0.000000	419	4.333569
420	35344.860208	420	0.000000
421	46088.975571	421	0.000000
422	5356.757064	422	0.000000
423	0.000000	423	8.786751
424	0.000000	424	9.880409
425	730.072420	425	0.000000
426	0.000000	426	50.830097
427	0.000000	427	86.137443
428	3067.064825	428	0.000000
429	-0.000000	429	0.000000
430	0.000000	430	32.603020
431	141.579089	431	0.000000
432	0.000000	432	338.339843
433	0.000000	433	367.874757
434	172.701848	434	0.000000
435	0.000000	435	270.401127
436	0.000000	436	308.637673
437	406.202888	437	0.000000
438	0.000000	438	108.683109
439	0.000000	439	137.501091
440	303.781693	440	0.000000
441	0.000000	441	128.873433
442	0.000000	442	200.290567
443	17353.618181	443	0.000000
444	28278.420292	444	0.000000
445	3904.646104	445	0.000000
446	0.000000	446	5.328018
447	0.000000	447	20.280182
448	641.728587	448	0.000000
449	0.000000	449	60.372410
450	0.000000	450	95.439370
451	2230.216715	451	0.000000
452	-0.000000	452	0.000000
453	0.000000	453	44.835020

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Coordenada x	Valor x	Coordenada z	Valor z
454	92.501066	454	0.000000
455	0.000000	455	520.111299
456	0.000000	456	560.969701
457	31.783819	457	0.000000
458	0.000000	458	1535.000423
459	0.000000	459	1609.653577
460	240.877618	460	0.000000
461	0.000000	461	188.695607
462	0.000000	462	226.414393
463	326.975065	463	0.000000
464	0.000000	464	62.653020
465	0.000000	465	243.157380
466	16282.175182	466	0.000000
467	25637.990777	467	0.000000
468	0.000000	468	0.788080
469	2.870427	469	0.000000
470	26881.424429	470	0.000000
471	88367.100000	471	0.000000
472	710.471484	472	0.000000
473	0.000000	473	71.846398
474	0.000000	474	68.820342
475	1573.818051	475	0.000000
476	0.000000	476	33.616177
477	0.000000	477	29.928343
478	8619.326934	478	0.000000
479	0.000000	479	6.539236
480	0.000000	480	5.062104
481	2151.738885	481	0.000000
482	0.000000	482	23.808127
483	0.000000	483	22.662433
484	11873.003556	484	0.000000
485	0.000000	485	2.941806
486	0.000000	486	5.480374
487	2711.102628	487	0.000000
488	0.000000	488	15.800895
489	0.000000	489	21.081785
490	569.967795	490	0.000000
491	0.000000	491	83.257360
492	0.000000	492	92.212020
493	2720.823009	493	0.000000
494	0.000000	494	16.056435
495	0.000000	495	20.696105
496	2170.295976	496	0.000000
497	0.000000	497	22.981758
498	0.000000	498	23.092702
499	13080.098142	499	0.000000
500	0.000000	500	6.539080
501	0.000000	501	1.106360
502	28111.689238	502	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
503	1865.429481	503	0.000000
504	0.000000	504	25.645570
505	0.000000	505	27.953610
506	4696.711365	506	0.000000
507	0.000000	507	9.491070
508	0.000000	508	11.799110
509	10365.997115	509	0.000000
510	0.347386	510	0.000000
511	0.000000	511	2.308040
512	43327.272801	512	0.000000
513	0.000000	513	3.669120
514	0.000000	514	5.977160
515	49267.764589	515	0.000000
516	64091.966346	516	0.000000
517	7569.525786	517	0.000000
518	0.000000	518	6.176239
519	0.000000	519	7.034681
520	951.489391	520	0.000000
521	0.000000	521	65.380736
522	0.000000	522	39.716484
523	1031.120803	523	0.000000
524	0.000000	524	62.676189
525	0.000000	525	34.307611
526	3536.860924	526	0.000000
527	0.000000	527	28.274140
528	0.075695	528	0.000000
529	168.876120	529	0.000000
530	0.000000	530	311.751542
531	0.000000	531	280.314858
532	299.374745	532	0.000000
533	0.000000	533	178.368226
534	0.000000	534	155.633174
535	340.401575	535	0.000000
536	0.000000	536	162.962808
537	0.000000	537	130.809192
538	743.176042	538	0.000000
539	0.000000	539	80.863759
540	0.000000	540	53.689521
541	371.436630	541	0.000000
542	0.000000	542	129.402932
543	0.000000	543	139.848468
544	5151.268458	544	0.000000
545	6915.753911	545	0.000000
546	5272.142862	546	0.000000
547	2.489337	547	0.000000
548	0.000000	548	18.960220
549	693.708558	549	0.000000
550	0.000000	550	111.854001
551	0.000000	551	32.238219

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Coordenada x	Valor x	Coordenada z	Valor z
552	915.823937	552	0.000000
553	0.000000	553	89.497101
554	0.000000	554	19.649379
555	2105.219366	555	0.000000
556	0.000000	556	47.483380
557	0.052721	557	0.000000
558	288.386215	558	0.000000
559	0.000000	559	210.222370
560	0.000000	560	136.398030
561	17.872564	561	0.000000
562	0.000000	562	2813.310794
563	0.000000	563	2773.281206
564	821.294415	564	0.000000
565	0.000000	565	99.338838
566	0.000000	566	22.374882
567	241.095093	567	0.000000
568	0.000000	568	174.385991
569	0.000000	569	240.207609
570	7573.933114	570	0.000000
571	19020.424696	571	0.000000
572	0.000000	572	0.874820
573	4.950473	573	0.000000
574	24275.133654	574	0.000000
575	41527.732691	575	0.000000
576	824.740771	576	0.000000
577	0.000000	577	62.486727
578	0.000000	578	58.798893
579	6448.841610	579	0.000000
580	0.000000	580	8.492666
581	0.000000	581	7.015534
582	2975.877325	582	0.000000
583	0.000000	583	14.162885
584	0.000000	584	19.443775
585	1375.813784	585	0.000000
586	0.000000	586	36.300715
587	0.000000	587	36.389545
588	358.799610	588	0.000000
589	0.000000	589	134.953770
590	0.000000	590	143.908430
591	1580.960784	591	0.000000
592	0.000000	592	29.311725
593	0.000000	593	33.951395
594	1605.046869	594	0.000000
595	0.000000	595	31.176115
596	0.000000	596	31.140825
597	6848.753675	597	0.000000
598	0.000000	598	10.017550
599	0.000000	599	4.584830
600	21963.187266	600	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
601	4051.860879	601	0.000000
602	0.000000	602	9.888144
603	0.000000	603	14.793456
604	2986.259258	604	0.000000
605	0.000000	605	14.291594
606	0.000000	606	19.196906
607	5542.706482	607	0.000000
608	0.000000	608	4.707594
609	0.000000	609	9.612906
610	6983.718807	610	0.000000
611	0.000000	611	6.569354
612	0.000000	612	11.474666
613	24133.138710	613	0.000000
614	30374.678515	614	0.000000
615	3897.377713	615	0.000000
616	0.000000	616	13.341465
617	0.000000	617	12.319955
618	646.769831	618	0.000000
619	0.000000	619	27.922477
620	0.000000	620	126.708723
621	386.347053	621	0.000000
622	0.000000	622	81.392140
623	0.000000	623	177.474060
624	1006.341899	624	0.000000
625	0.000000	625	3.185002
626	0.000000	626	96.198818
627	301.929851	627	0.000000
628	0.000000	628	114.760076
629	0.000000	629	216.475524
630	141.630706	630	0.000000
631	0.000000	631	306.958859
632	0.000000	632	399.255741
633	1028.128241	633	0.000000
634	-0.000000	634	0.000000
635	0.000000	635	97.276260
636	3060.752355	636	0.000000
637	3892.700253	637	0.000000
638	1649.066265	638	0.000000
639	0.000000	639	23.564252
640	0.000000	640	37.082248
641	239.427931	641	0.000000
642	0.000000	642	120.837260
643	0.000000	643	296.873740
644	538.255229	644	0.000000
645	-0.000000	645	0.000000
646	0.000000	646	185.804540
647	373.134224	647	0.000000
648	0.000000	648	43.098339
649	0.000000	649	224.926261

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Coordenada x	Valor x	Coordenada z	Valor z
650	158.409305	650	0.000000
651	0.000000	651	226.312447
652	0.000000	652	405.000753
653	140.813768	653	0.000000
654	0.000000	654	194.376660
655	0.000000	655	515.850540
656	1728.557442	656	0.000000
657	3525.797418	657	0.000000
658	0.000000	658	2.043220
659	0.771928	659	0.000000
660	11153.054177	660	0.000000
661	54531.400000	661	0.000000
662	857.233608	662	0.000000
663	0.000000	663	60.186977
664	0.000000	664	56.499143
665	1098.807710	665	0.000000
666	0.000000	666	46.251036
667	0.000000	667	44.773904
668	921.580660	668	0.000000
669	0.000000	669	51.618915
670	0.000000	670	56.899805
671	4260.538282	671	0.000000
672	0.000000	672	11.691575
673	0.000000	673	11.780405
674	912.310322	674	0.000000
675	0.000000	675	50.335210
676	0.000000	676	59.289870
677	1044.821624	677	0.000000
678	0.000000	678	45.527055
679	0.000000	679	50.166725
680	707.817572	680	0.000000
681	0.000000	681	70.659075
682	0.000000	682	70.623785
683	6864.957946	683	0.000000
684	0.000000	684	9.999790
685	0.000000	685	4.567070
686	14479.722642	686	0.000000
687	4873.471218	687	0.000000
688	0.000000	688	10.219772
689	0.000000	689	10.299788
690	1966.947598	690	0.000000
691	0.000000	691	25.383292
692	0.000000	692	25.463308
693	9193.994040	693	0.000000
694	0.000000	694	2.041812
695	0.000000	695	2.121828
696	24017.264502	696	0.000000
697	0.000000	697	5.398442
698	0.000000	698	5.478458

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Coordenada x	Valor x	Coordenada z	Valor z
699	18869.581837	699	0.000000
700	30368.255202	700	0.000000
701	6835.510990	701	0.000000
702	0.000000	702	5.434024
703	0.000000	703	9.195916
704	1063.400445	704	0.000000
705	0.000000	705	33.769550
706	0.000000	706	60.268430
707	166.513048	707	0.000000
708	0.000000	708	289.937076
709	0.000000	709	310.663524
710	3693.431653	710	0.000000
711	-0.000000	711	0.000000
712	0.000000	712	27.076060
713	346.628762	713	0.000000
714	0.000000	714	129.544460
715	0.000000	715	158.972540
716	139.102649	716	0.000000
717	0.000000	717	349.448843
718	0.000000	718	369.458357
719	507.605046	719	0.000000
720	0.000000	720	86.008304
721	0.000000	721	110.997196
722	482.587076	722	0.000000
723	0.000000	723	72.301166
724	0.000000	724	134.909834
725	4088.701554	725	0.000000
726	5879.978074	726	0.000000
727	3389.126510	727	0.000000
728	0.000000	728	0.503551
729	0.000000	729	29.002809
730	157.899404	730	0.000000
731	0.000000	731	357.631572
732	0.000000	732	275.680628
733	76.594259	733	0.000000
734	0.000000	734	690.821250
735	0.000000	735	614.661750
736	2008.565826	736	0.000000
737	0.000000	737	49.788400
738	0.033891	738	0.000000
739	536.193705	739	0.000000
740	0.000000	740	123.295526
741	0.000000	741	63.202054
742	135.293930	742	0.000000
743	0.000000	743	409.198659
744	0.000000	744	329.899541
745	212.193211	745	0.000000
746	0.000000	746	203.883572
747	0.000000	747	267.370028

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Coordenada x	Valor x	Coordenada z	Valor z
748	11892.733589	748	0.000000
749	13060.900533	749	0.000000
750	0.459905	750	0.000000
751	0.000000	751	1.361080
752	24163.144798	752	0.000000
753	29348.700000	753	0.000000
754	1028.084961	754	0.000000
755	0.000000	755	49.367236
756	0.000000	756	47.890104
757	463.415973	757	0.000000
758	0.000000	758	105.257655
759	0.000000	759	110.538545
760	1675.810770	760	0.000000
761	0.000000	761	29.793865
762	0.000000	762	29.882695
763	1058.901096	763	0.000000
764	0.000000	764	42.741480
765	0.000000	765	51.696140
766	986.996781	766	0.000000
767	0.000000	767	48.343855
768	0.000000	768	52.983525
769	389.457249	769	0.000000
770	0.000000	770	128.387345
771	0.000000	771	128.352055
772	641.562582	772	0.000000
773	0.000000	773	77.874708
774	0.000000	774	77.985652
775	4303.399881	775	0.000000
776	0.000000	776	14.335080
777	0.000000	777	8.902360
778	6019.004454	778	0.000000
779	1006.366923	779	0.000000
780	0.000000	780	45.704430
781	0.000000	781	53.669510
782	6373.657179	782	0.000000
783	0.000000	783	3.862070
784	0.000000	784	11.827150
785	3394.884558	785	0.000000
786	1.347006	786	0.000000
787	0.000000	787	7.965080
788	12554.786886	788	0.000000
789	0.000000	789	10.740230
790	0.000000	790	18.705310
791	11993.574653	791	0.000000
792	15701.231822	792	0.000000
793	2435.061639	793	0.000000
794	0.000000	794	18.059661
795	0.000000	795	23.006419
796	176.590670	796	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
797	0.000000	797	325.533640
798	0.000000	798	240.717760
799	188.790329	799	0.000000
800	0.000000	800	308.590603
801	0.000000	801	221.070397
802	216.184772	802	0.000000
803	0.000000	803	273.386650
804	0.000000	804	189.147950
805	1221.207763	805	0.000000
806	0.000000	806	81.886680
807	0.024351	807	0.000000
808	152.800118	808	0.000000
809	0.000000	809	372.877722
810	0.000000	810	281.572478
811	195.194541	811	0.000000
812	0.000000	812	280.500646
813	0.000000	813	231.794554
814	5196.180306	814	0.000000
815	8820.390600	815	0.000000
816	1036.596084	816	0.000000
817	0.000000	817	30.240469
818	0.000000	818	66.219451
819	39.494311	819	0.000000
820	0.000000	820	1163.808435
821	0.000000	821	1367.837565
822	86.493577	822	0.000000
823	0.000000	823	471.136105
824	0.000000	824	684.933295
825	39.794924	825	0.000000
826	0.000000	826	1138.200234
827	0.000000	827	1374.361766
828	148.181410	828	0.000000
829	0.000000	829	219.286064
830	0.000000	830	455.477736
831	442.657626	831	0.000000
832	-0.000000	832	0.000000
833	0.000000	833	225.886600
834	167.980395	834	0.000000
835	0.000000	835	122.885735
836	0.000000	836	472.352265
837	2831.492699	837	0.000000
838	5103.811780	838	0.000000
839	0.280581	839	0.000000
840	0.000000	840	2.310960
841	13647.468178	841	0.000000
842	30860.181981	842	0.000000
843	663.493913	843	0.000000
844	0.000000	844	77.213227
845	0.000000	845	73.525393

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Coordenada x	Valor x	Coordenada z	Valor z
846	5689.383150	846	0.000000
847	0.000000	847	9.528696
848	0.000000	848	8.051564
849	687.564855	849	0.000000
850	0.000000	850	71.457986
851	0.000000	851	73.996554
852	540.361786	852	0.000000
853	0.000000	853	92.479645
854	0.000000	854	92.568475
855	1095.227858	855	0.000000
856	0.000000	856	43.346435
857	0.000000	857	47.986105
858	657.013274	858	0.000000
859	0.000000	859	76.121145
860	0.000000	860	76.085855
861	4725.311065	861	0.000000
862	0.000000	862	13.299940
863	0.000000	863	7.867220
864	21107.438669	864	0.000000
865	3291.547010	865	0.000000
866	0.000000	866	13.052639
867	0.000000	867	17.335101
868	838.471144	868	0.000000
869	0.000000	869	57.496169
870	0.000000	870	61.778631
871	2385.492067	871	0.000000
872	0.000000	872	13.306599
873	0.000000	873	17.589061
874	3237.233090	874	0.000000
875	0.000000	875	18.823129
876	0.000000	876	23.105591
877	15753.953967	877	0.000000
878	20619.003969	878	0.000000
879	3128.913851	879	0.000000
880	0.000000	880	16.310953
881	0.000000	881	15.656307
882	1392.022483	882	0.000000
883	-0.000000	883	0.000000
884	0.000000	884	71.854560
885	387.703715	885	0.000000
886	0.000000	886	94.423883
887	0.000000	887	163.574117
888	142.928785	888	0.000000
889	0.000000	889	316.854036
890	0.000000	890	382.936164
891	489.612439	891	0.000000
892	0.000000	892	69.462402
893	0.000000	893	134.827598
894	262.953920	894	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
895	0.000000	895	155.014113
896	0.000000	896	225.358687
897	89.424358	897	0.000000
898	0.000000	898	524.431527
899	0.000000	899	594.136673
900	4874.235999	900	0.000000
901	6279.370804	901	0.000000
902	1092.141840	902	0.000000
903	0.000000	903	43.344888
904	0.000000	904	48.230192
905	309.447469	905	0.000000
906	0.000000	906	323.206200
907	0.010921	907	0.000000
908	265.630738	908	0.000000
909	0.000000	909	344.972070
910	0.000000	910	31.533930
911	126.317125	911	0.000000
912	0.000000	912	541.419699
913	0.000000	913	250.345901
914	65.703253	914	0.000000
915	0.000000	915	902.845003
916	0.000000	916	619.224997
917	105.610116	917	0.000000
918	0.000000	918	633.762087
919	0.000000	919	313.207713
920	61.607721	920	0.000000
921	0.000000	921	973.587047
922	0.000000	922	649.789753
923	552.153068	923	0.000000
924	2062.119315	924	0.000000
925	0.000000	925	2.551260
926	1.801754	926	0.000000
927	10241.178011	927	0.000000
928	130354.901619	928	0.000000
929	27842.503437	929	0.000000
930	0.000000	930	0.886581
931	0.000000	931	2.705099
932	2296.853367	932	0.000000
933	0.000000	933	23.616177
934	0.000000	934	19.928343
935	20498.308280	935	0.000000
936	0.000000	936	2.051799
937	0.000000	937	2.826781
938	91915.848229	938	0.000000
939	19853.051517	939	0.000000
940	0.000000	940	2.147546
941	0.000000	941	2.889574
942	1209.693487	942	0.000000
943	0.000000	943	40.982056

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Coordenada x	Valor x	Coordenada z	Valor z
944	0.000000	944	41.724084
945	16020.617409	945	0.000000
946	0.000000	946	36.515746
947	0.000000	947	37.257774
948	1355.690977	948	0.000000
949	0.000000	949	2.749926
950	0.000000	950	3.491954
951	62213.019489	951	0.000000
952	115293.900152	952	0.000000
953	1157.551526	953	0.000000
954	0.000000	954	40.729292
955	0.000000	955	45.671268
956	63.503277	956	0.000000
957	0.000000	957	853.624170
958	0.000000	958	721.179030
959	762.004594	959	0.000000
960	0.000000	960	131.250800
961	-0.000000	961	0.000000
962	158.017359	962	0.000000
963	0.000000	963	363.271212
964	0.000000	964	269.640188
965	5311.810608	965	0.000000
966	5384.828887	966	0.000000
967	33514.245206	967	0.000000
968	0.000000	968	2.762466
969	0.000000	969	0.221374
970	201.755756	970	0.000000
971	0.000000	971	240.836482
972	0.000000	972	254.703718
973	29863.873618	973	0.000000
974	-0.000000	974	0.000000
975	0.000000	975	3.348560
976	97.191311	976	0.000000
977	0.000000	977	502.177237
978	0.000000	978	527.688763
979	3026.001200	979	0.000000
980	0.000000	980	11.854521
981	0.000000	981	21.194599
982	11990.914413	982	0.000000
983	12041.851445	983	0.000000
984	0.276189	984	0.000000
985	0.000000	985	0.676680
986	15061.001467	986	0.000000
987	138598.800000	987	0.000000
988	6920.238084	988	0.000000
989	0.000000	989	9.068827
990	0.000000	990	5.380993
991	9229.294092	991	0.000000
992	0.000000	992	5.029689

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Coordenada x	Valor x	Coordenada z	Valor z
993	0.000000	993	5.804671
994	15627.014700	994	0.000000
995	0.000000	995	3.217315
996	0.000000	996	3.182025
997	1021.473156	997	0.000000
998	0.000000	998	49.264832
999	0.000000	999	48.620848
1000	911.980104	1000	0.000000
1001	0.000000	1001	54.769088
1002	0.000000	1002	54.880032
1003	18416.442726	1003	0.000000
1004	0.000000	1004	5.432720
1005	9.136098	1005	0.000000
1006	72844.757304	1006	0.000000
1007	15511.977696	1007	0.000000
1008	0.000000	1008	3.239923
1009	0.000000	1009	3.206537
1010	2052.648228	1010	0.000000
1011	0.000000	1011	24.372483
1012	0.000000	1012	24.339097
1013	26548.600140	1013	0.000000
1014	0.000000	1014	2.327173
1015	0.000000	1015	2.293787
1016	21640.816632	1016	0.000000
1017	0.000000	1017	1.900063
1018	0.000000	1018	1.866677
1019	56267.749203	1019	0.000000
1020	103137.976522	1020	0.000000
1021	30299.083668	1021	0.000000
1022	0.000000	1022	1.705189
1023	0.000000	1023	1.595191
1024	2263.341550	1024	0.000000
1025	0.000000	1025	18.393847
1026	0.000000	1026	25.785513
1027	7453.877573	1027	0.000000
1028	0.000000	1028	3.575984
1029	0.000000	1029	9.839636
1030	512.357505	1030	0.000000
1031	0.000000	1031	94.386567
1032	0.000000	1032	100.811573
1033	1048.348295	1033	0.000000
1034	0.000000	1034	45.831380
1035	0.000000	1035	49.552060
1036	183.612447	1036	0.000000
1037	0.000000	1037	267.802496
1038	0.000000	1038	277.156704
1039	242.695660	1039	0.000000
1040	0.000000	1040	205.962979
1041	0.000000	1041	205.898621

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Coordenada x	Valor x	Coordenada z	Valor z
1042	20345.531692	1042	0.000000
1043	0.000000	1043	0.000000
1044	0.000000	1044	4.915020
1045	264.208010	1045	0.000000
1046	0.000000	1046	186.088045
1047	0.000000	1047	192.556355
1048	170.886832	1048	0.000000
1049	0.000000	1049	298.911522
1050	0.000000	1050	285.883878
1051	44702.314999	1051	0.000000
1052	48184.097915	1052	0.000000
1053	10741.407000	1053	0.000000
1054	0.000000	1054	0.226697
1055	0.000000	1055	9.083243
1056	1275.327253	1056	0.000000
1057	0.000000	1057	45.077732
1058	0.000000	1058	33.335188
1059	2162.352643	1059	0.000000
1060	0.000000	1060	34.254140
1061	0.000000	1061	11.992920
1062	463.276884	1062	0.000000
1063	0.000000	1063	114.015233
1064	0.000000	1064	101.827567
1065	723.218933	1065	0.000000
1066	0.000000	1066	77.272021
1067	0.000000	1067	61.002319
1068	5180.473182	1068	0.000000
1069	0.000000	1069	19.303900
1070	0.107414	1070	0.000000
1071	638.898888	1071	0.000000
1072	0.000000	1072	16.518673
1073	0.000000	1073	140.000347
1074	13703.324255	1074	0.000000
1075	16668.277448	1075	0.000000
1076	0.000000	1076	0.491520
1077	1.755808	1077	0.000000
1078	35460.823478	1078	0.000000
1079	96428.400000	1079	0.000000
1080	3845.564592	1080	0.000000
1081	0.000000	1081	13.019515
1082	0.000000	1082	12.984225
1083	7455.843888	1083	0.000000
1084	0.000000	1084	7.028002
1085	0.000000	1085	6.384018
1086	18004.146564	1086	0.000000
1087	0.000000	1087	1.386729
1088	0.000000	1088	4.167431
1089	3108.851616	1089	0.000000
1090	0.000000	1090	16.028938

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Coordenada x	Valor x	Coordenada z	Valor z
1091	0.000000	1091	16.139882
1092	16069.792860	1092	0.000000
1093	0.000000	1093	5.827710
1094	0.000000	1094	0.394990
1095	40366.856808	1095	0.000000
1096	28362.485292	1096	0.000000
1097	0.000000	1097	2.055709
1098	0.000000	1098	1.470051
1099	2316.210168	1099	0.000000
1100	0.000000	1100	21.878979
1101	0.000000	1101	21.293321
1102	12604.156164	1102	0.000000
1103	0.000000	1103	4.205469
1104	0.000000	1104	3.619811
1105	12778.691568	1105	0.000000
1106	0.000000	1106	4.259639
1107	0.000000	1107	3.673981
1108	51794.378233	1108	0.000000
1109	66219.433933	1109	0.000000
1110	10130.767704	1110	0.000000
1111	0.000000	1111	5.220969
1112	0.000000	1112	4.649731
1113	510.489385	1113	0.000000
1114	0.000000	1114	89.091396
1115	0.000000	1115	106.794984
1116	278.697420	1116	0.000000
1117	0.000000	1117	172.445125
1118	0.000000	1118	186.363675
1119	1614.743064	1119	0.000000
1120	0.000000	1120	21.514626
1121	0.000000	1121	40.412554
1122	1454.474319	1122	0.000000
1123	0.000000	1123	24.150472
1124	0.000000	1124	44.601688
1125	5476.794328	1125	0.000000
1126	-0.000000	1126	0.000000
1127	0.000000	1127	18.258500
1128	4405.462312	1128	0.000000
1129	10107.516890	1129	0.000000
1130	2950.709040	1130	0.000000
1131	0.000000	1131	12.192343
1132	0.000000	1132	21.701377
1133	400.027625	1133	0.000000
1134	0.000000	1134	165.793213
1135	0.000000	1135	84.206787
1136	22.602431	1136	0.000000
1137	0.000000	1137	2238.273146
1138	0.000000	1138	2186.504854
1139	424.252946	1139	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1140	0.000000	1140	162.220230
1141	0.000000	1141	73.517570
1142	678.663079	1142	0.000000
1143	0.000000	1143	94.728121
1144	0.000000	1144	52.634099
1145	1087.719873	1145	0.000000
1146	0.000000	1146	91.945580
1147	-0.000000	1147	0.000000
1148	4157.831417	1148	0.000000
1149	7906.426214	1149	0.000000
1150	0.718299	1150	0.000000
1151	0.000000	1151	0.873800
1152	30208.966067	1152	0.000000
1153	69385.600000	1153	0.000000
1154	2726.160224	1154	0.000000
1155	0.000000	1155	20.183117
1156	0.000000	1156	16.495283
1157	2659.550048	1157	0.000000
1158	0.000000	1158	18.818875
1159	0.000000	1159	18.783585
1160	1739.496992	1160	0.000000
1161	0.000000	1161	29.067532
1162	0.000000	1162	28.423548
1163	7761.473216	1163	0.000000
1164	0.000000	1164	5.051699
1165	0.000000	1165	7.832401
1166	779.894144	1166	0.000000
1167	0.000000	1167	64.071758
1168	0.000000	1168	64.182702
1169	8718.300640	1169	0.000000
1170	0.000000	1170	8.451490
1171	0.000000	1171	3.018770
1172	47071.191040	1172	0.000000
1173	5943.570496	1173	0.000000
1174	0.000000	1174	7.199203
1175	0.000000	1175	9.626477
1176	1449.465184	1176	0.000000
1177	0.000000	1177	33.276253
1178	0.000000	1178	35.703527
1179	8498.348288	1179	0.000000
1180	0.000000	1180	6.571013
1181	0.000000	1181	8.998287
1182	6423.024992	1182	0.000000
1183	0.000000	1183	4.669823
1184	0.000000	1184	7.097097
1185	26371.150305	1185	0.000000
1186	50775.348194	1186	0.000000
1187	15598.679079	1187	0.000000
1188	1.979225	1188	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1189	0.000000	1189	6.409840
1190	1019.685651	1190	0.000000
1191	0.000000	1191	51.513857
1192	0.000000	1192	46.534963
1193	4877.706948	1193	0.000000
1194	0.000000	1194	12.141538
1195	0.000000	1195	8.356982
1196	6257.566099	1196	0.000000
1197	0.000000	1197	10.201121
1198	0.000000	1198	5.777139
1199	39.464658	1199	0.000000
1200	0.000000	1200	1279.899610
1201	0.000000	1201	1258.172390
1202	2955.013765	1202	0.000000
1203	-0.000000	1203	0.000000
1204	0.000000	1204	33.835220
1205	14431.477721	1205	0.000000
1206	18144.357621	1206	0.000000
1207	5544.603296	1207	0.000000
1208	0.000000	1208	6.434098
1209	0.000000	1209	11.601462
1210	1082.694686	1210	0.000000
1211	0.000000	1211	30.272450
1212	0.000000	1212	62.089250
1213	3499.698154	1213	0.000000
1214	-0.000000	1214	0.000000
1215	0.000000	1215	28.573880
1216	329.127652	1216	0.000000
1217	0.000000	1217	64.628313
1218	0.000000	1218	239.230687
1219	5436.566818	1219	0.000000
1220	6177.214883	1220	0.000000
1221	0.000000	1221	1.067140
1222	1.061191	1222	0.000000
1223	18610.251806	1223	0.000000
1224	35084.531544	1224	0.000000
1225	94918.682198	1225	0.000000
1226	317605.514672	1226	0.000000
1227	268953.701619	1227	0.000000
1228	165814.000000	1228	0.000000
1229	633.977485	1229	0.000000
1230	0.000000	1230	80.708277
1231	0.000000	1231	77.020443
1232	1201.996051	1232	0.000000
1233	0.000000	1233	42.335906
1234	0.000000	1234	40.858774
1235	458.203982	1235	0.000000
1236	0.000000	1236	106.778965
1237	0.000000	1237	111.418635

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Coordenada x	Valor x	Coordenada z	Valor z
1238	758.878417	1238	0.000000
1239	0.000000	1239	65.893795
1240	0.000000	1240	65.858505
1241	1015.697188	1241	0.000000
1242	0.000000	1242	49.553972
1243	0.000000	1243	48.909988
1244	1414.608312	1244	0.000000
1245	0.000000	1245	33.960329
1246	0.000000	1246	36.741031
1247	748.002213	1247	0.000000
1248	0.000000	1248	66.789448
1249	0.000000	1249	66.900392
1250	4837.455209	1250	0.000000
1251	0.000000	1251	13.053130
1252	0.000000	1252	7.620410
1253	24386.205340	1253	0.000000
1254	8654.301396	1254	0.000000
1255	0.000000	1255	5.728517
1256	0.000000	1256	5.826843
1257	512.935851	1257	0.000000
1258	0.000000	1258	97.416727
1259	0.000000	1259	97.515053
1260	638.889319	1260	0.000000
1261	1729.048068	1261	0.000000
1262	41197.440302	1262	0.000000
1263	42569.217549	1263	0.000000
1264	21102.504452	1264	0.000000
1265	0.000000	1265	56.004647
1266	0.000000	1266	56.102973
1267	892.199637	1267	0.000000
1268	1658.546183	1268	0.000000
1269	115598.620949	1269	0.000000
1270	22996.507609	1270	0.000000
1271	19201.716560	1271	0.000000
1272	0.000000	1272	78.198097
1273	0.000000	1273	78.296423
1274	12402.732766	1274	0.000000
1275	14854.786115	1275	0.000000
1276	1230.063676	1276	0.000000
1277	0.000000	1277	38.743152
1278	0.000000	1278	42.557668
1279	154.003972	1279	0.000000
1280	0.000000	1280	496.870807
1281	0.000000	1281	152.479793
1282	85.108106	1282	0.000000
1283	0.000000	1283	761.091770
1284	0.000000	1284	413.996430
1285	183.008874	1285	0.000000
1286	0.000000	1286	448.664189

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Coordenada x	Valor x	Coordenada z	Valor z
1287	0.000000	1287	97.783811
1288	289.126467	1288	0.000000
1289	0.000000	1289	345.901000
1290	0.012301	1290	0.000000
1291	50.198899	1291	0.000000
1292	0.000000	1292	1168.189755
1293	0.000000	1293	823.842045
1294	143.806744	1294	0.000000
1295	0.000000	1295	520.975314
1296	0.000000	1296	174.434886
1297	33.998960	1297	0.000000
1298	0.000000	1298	1652.509832
1299	0.000000	1299	1288.666168
1300	169.010749	1300	0.000000
1301	0.000000	1301	449.998612
1302	0.000000	1302	141.717388
1303	816.843117	1303	0.000000
1304	1484.710393	1304	0.000000
1305	786.946043	1305	0.000000
1306	0.000000	1306	53.230614
1307	0.000000	1307	73.834186
1308	113.989134	1308	0.000000
1309	0.000000	1309	731.498930
1310	0.000000	1310	145.694070
1311	173.592428	1311	0.000000
1312	0.000000	1312	576.036800
1313	0.007869	1313	0.000000
1314	46.595075	1314	0.000000
1315	0.000000	1315	1349.797229
1316	0.000000	1316	796.124771
1317	13.598428	1317	0.000000
1318	0.000000	1318	3949.579333
1319	0.000000	1319	3403.360667
1320	42.998732	1320	0.000000
1321	0.000000	1321	1452.850419
1322	0.000000	1322	872.731581
1323	97.896088	1323	0.000000
1324	0.000000	1324	802.301717
1325	0.000000	1325	219.148683
1326	92.489768	1326	0.000000
1327	0.000000	1327	808.812698
1328	0.000000	1328	272.268302
1329	57.997923	1329	0.000000
1330	0.000000	1330	1130.060399
1331	0.000000	1331	594.077601
1332	50.994104	1332	0.000000
1333	0.000000	1333	1200.575930
1334	0.000000	1334	760.208470
1335	612.956281	1335	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1336	1114.911931	1336	0.000000
1337	0.000000	1337	2.653720
1338	0.584293	1338	0.000000
1339	20229.745429	1339	0.000000
1340	59393.505580	1340	0.000000
1341	110361.403247	1341	0.000000
1342	50521.824945	1342	0.000000
1343	48819.217872	1343	0.000000
1344	687208.905326	1344	0.000000
1345	2233.428942	1345	0.000000
1346	0.000000	1346	23.883388
1347	0.000000	1347	20.857332
1348	9414.762003	1348	0.000000
1349	0.000000	1349	7.155157
1350	0.000000	1350	3.467323
1351	5683.217647	1351	0.000000
1352	0.000000	1352	9.532096
1353	0.000000	1353	8.054964
1354	1910.440757	1354	0.000000
1355	0.000000	1355	26.746747
1356	0.000000	1356	25.601053
1357	4453.113707	1357	0.000000
1358	0.000000	1358	9.958596
1359	0.000000	1359	12.497164
1360	2171.580141	1360	0.000000
1361	0.000000	1361	20.391475
1362	0.000000	1362	25.672365
1363	1408.778256	1363	0.000000
1364	0.000000	1364	35.436705
1365	0.000000	1365	35.525535
1366	666.592638	1366	0.000000
1367	0.000000	1367	70.642860
1368	0.000000	1368	79.597520
1369	2879.405313	1369	0.000000
1370	0.000000	1370	15.066635
1371	0.000000	1371	19.706305
1372	16053.200028	1372	0.000000
1373	0.000000	1373	2.727439
1374	0.000000	1374	3.502421
1375	29838.610669	1375	0.000000
1376	0.000000	1376	1.693285
1377	0.000000	1377	1.657995
1378	4624.915933	1378	0.000000
1379	0.000000	1379	11.128362
1380	0.000000	1380	10.484378
1381	4686.764734	1381	0.000000
1382	0.000000	1382	9.279959
1383	0.000000	1383	12.060661
1384	3662.823465	1384	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1385	0.000000	1385	13.598268
1386	0.000000	1386	13.709212
1387	345226.265680	1387	0.000000
1388	0.000000	1388	0.144840
1389	0.000000	1389	0.144840
1390	215399.460702	1390	0.000000
1391	2748.497119	1391	0.000000
1392	0.000000	1392	19.699478
1393	0.000000	1393	16.673422
1394	3172.834056	1394	0.000000
1395	0.000000	1395	17.596907
1396	0.000000	1396	13.909073
1397	8314.419183	1397	0.000000
1398	0.000000	1398	6.752516
1399	0.000000	1399	5.275384
1400	1180.389045	1400	0.000000
1401	0.000000	1401	42.913437
1402	0.000000	1402	41.767743
1403	1852.435362	1403	0.000000
1404	0.000000	1404	25.712536
1405	0.000000	1405	28.251104
1406	1697.347750	1406	0.000000
1407	0.000000	1407	26.831995
1408	0.000000	1408	32.112885
1409	1828.741421	1409	0.000000
1410	0.000000	1410	27.294425
1411	0.000000	1411	27.383255
1412	441.568894	1412	0.000000
1413	0.000000	1413	108.875670
1414	0.000000	1414	117.830330
1415	1906.285227	1415	0.000000
1416	0.000000	1416	23.921375
1417	0.000000	1417	28.561045
1418	4801.253979	1418	0.000000
1419	0.000000	1419	10.023969
1420	0.000000	1420	10.798951
1421	3181.450035	1421	0.000000
1422	0.000000	1422	15.733005
1423	0.000000	1423	15.697715
1424	5809.323455	1424	0.000000
1425	0.000000	1425	8.928142
1426	0.000000	1426	8.284158
1427	3823.340427	1427	0.000000
1428	0.000000	1428	11.684959
1429	0.000000	1429	14.465661
1430	2621.411437	1430	0.000000
1431	0.000000	1431	19.013938
1432	0.000000	1432	19.124882
1433	61410.386246	1433	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1434	0.000000	1434	0.814150
1435	0.000000	1435	0.814150
1436	120139.728253	1436	0.000000
1437	3166.883237	1437	0.000000
1438	0.000000	1438	17.631727
1439	0.000000	1439	13.943893
1440	2259.828288	1440	0.000000
1441	0.000000	1441	22.864416
1442	0.000000	1442	21.387284
1443	269.112991	1443	0.000000
1444	0.000000	1444	185.964047
1445	0.000000	1445	184.818353
1446	2007.534859	1446	0.000000
1447	0.000000	1447	23.637316
1448	0.000000	1448	26.175884
1449	910.659140	1449	0.000000
1450	0.000000	1450	52.274435
1451	0.000000	1451	57.555325
1452	10798.158775	1452	0.000000
1453	0.000000	1453	4.242699
1454	0.000000	1454	5.017681
1455	2435.232292	1455	0.000000
1456	0.000000	1456	20.545625
1457	0.000000	1457	20.510335
1458	1345.564956	1458	0.000000
1459	0.000000	1459	37.477372
1460	0.000000	1460	36.833388
1461	938.291278	1461	0.000000
1462	0.000000	1462	53.221028
1463	0.000000	1463	53.331972
1464	12669.935742	1464	0.000000
1465	0.000000	1465	3.945960
1466	0.000000	1466	3.945960
1467	19120.750391	1467	0.000000
1468	397.711608	1468	0.000000
1469	0.000000	1469	127.756817
1470	0.000000	1470	124.068983
1471	323.523097	1471	0.000000
1472	0.000000	1472	152.110455
1473	0.000000	1473	157.391345
1474	249.143378	1474	0.000000
1475	0.000000	1475	201.000985
1476	0.000000	1476	201.089815
1477	580.123567	1477	0.000000
1478	0.000000	1478	85.923579
1479	0.000000	1479	86.698561
1480	154.495663	1480	0.000000
1481	0.000000	1481	324.061745
1482	0.000000	1482	324.026455

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Coordenada x	Valor x	Coordenada z	Valor z
1483	602.303637	1483	0.000000
1484	0.000000	1484	83.461332
1485	0.000000	1485	82.817348
1486	126.579368	1486	0.000000
1487	0.000000	1487	395.514128
1488	0.000000	1488	395.625072
1489	1380.900593	1489	0.000000
1490	0.000000	1490	36.263420
1491	0.000000	1491	36.263420
1492	117961.693638	1492	0.000000
1493	1410.821856	1493	0.000000
1494	0.000000	1494	36.911258
1495	0.000000	1495	33.885202
1496	3549.467362	1496	0.000000
1497	0.000000	1497	13.165341
1498	0.000000	1498	14.983859
1499	4710.210427	1499	0.000000
1500	0.000000	1500	12.448367
1501	0.000000	1501	8.760533
1502	346.807379	1502	0.000000
1503	0.000000	1503	144.706647
1504	0.000000	1504	143.560953
1505	1374.253731	1505	0.000000
1506	0.000000	1506	33.715255
1507	0.000000	1507	38.996145
1508	312.598488	1508	0.000000
1509	0.000000	1509	159.546985
1510	0.000000	1510	159.635815
1511	710.129396	1511	0.000000
1512	0.000000	1512	67.993765
1513	0.000000	1513	72.633435
1514	5765.967585	1514	0.000000
1515	0.000000	1515	8.275769
1516	0.000000	1516	9.050751
1517	1259.830888	1517	0.000000
1518	0.000000	1518	39.649855
1519	0.000000	1519	39.614565
1520	3432.685285	1520	0.000000
1521	0.000000	1521	14.874222
1522	0.000000	1522	14.230238
1523	1704.546473	1523	0.000000
1524	0.000000	1524	27.917969
1525	0.000000	1525	30.698671
1526	1001.494779	1526	0.000000
1527	0.000000	1527	49.844728
1528	0.000000	1528	49.955672
1529	29103.509054	1529	0.000000
1530	0.000000	1530	1.716270
1531	0.000000	1531	1.716270

Continua na próxima página



Coordenada x	Valor x	Coordenada z	Valor z
1532	185443.766651	1532	0.000000
1533	736.211754	1533	0.000000
1534	0.000000	1534	69.577278
1535	0.000000	1535	66.551222
1536	2303.211582	1536	0.000000
1537	0.000000	1537	20.825151
1538	0.000000	1538	22.643669
1539	3998.167609	1539	0.000000
1540	0.000000	1540	14.359567
1541	0.000000	1541	10.671733
1542	554.476862	1542	0.000000
1543	0.000000	1543	90.744177
1544	0.000000	1544	89.598483
1545	623.091056	1545	0.000000
1546	0.000000	1546	79.116566
1547	0.000000	1547	81.655134
1548	1676.411651	1548	0.000000
1549	0.000000	1549	27.203175
1550	0.000000	1550	32.484065
1551	285.583401	1551	0.000000
1552	0.000000	1552	175.148285
1553	0.000000	1553	175.237115
1554	239.222459	1554	0.000000
1555	0.000000	1555	204.640170
1556	0.000000	1556	213.594830
1557	895.693393	1557	0.000000
1558	0.000000	1558	53.571065
1559	0.000000	1559	58.210735
1560	4582.315474	1560	0.000000
1561	0.000000	1561	10.534069
1562	0.000000	1562	11.309051
1563	1550.309889	1563	0.000000
1564	0.000000	1564	32.298615
1565	0.000000	1565	32.263325
1566	5834.060899	1566	0.000000
1567	0.000000	1567	8.901412
1568	0.000000	1568	8.257428
1569	1472.423507	1569	0.000000
1570	0.000000	1570	33.935008
1571	0.000000	1571	34.045952
1572	51314.144670	1572	0.000000
1573	0.000000	1573	0.975340
1574	0.000000	1574	0.975340
1575	186167.486498	1575	0.000000
1576	530.577337	1576	0.000000
1577	0.000000	1577	95.674988
1578	0.000000	1578	92.648932
1579	3546.490618	1579	0.000000
1580	0.000000	1580	15.944317

Continua na próxima página

Coordenada x	Valor x	Coordenada z	Valor z
1581	0.000000	1581	12.256483
1582	314.623052	1582	0.000000
1583	0.000000	1583	159.757847
1584	0.000000	1584	158.612153
1585	1012.751127	1585	0.000000
1586	0.000000	1586	48.142706
1587	0.000000	1587	50.681274
1588	338.824825	1588	0.000000
1589	0.000000	1589	147.666085
1590	0.000000	1590	147.754915
1591	197.337536	1591	0.000000
1592	0.000000	1592	248.303270
1593	0.000000	1593	257.257930
1594	791.211818	1594	0.000000
1595	0.000000	1595	60.835405
1596	0.000000	1596	65.475075
1597	3010.328257	1597	0.000000
1598	0.000000	1598	16.222699
1599	0.000000	1599	16.997681
1600	1738.804324	1600	0.000000
1601	0.000000	1601	28.788005
1602	0.000000	1602	28.752715
1603	3829.465197	1603	0.000000
1604	0.000000	1604	13.378872
1605	0.000000	1605	12.734888
1606	3693.562932	1606	0.000000
1607	0.000000	1607	12.150979
1608	0.000000	1608	14.931681
1609	1656.890630	1609	0.000000
1610	0.000000	1610	30.119538
1611	0.000000	1611	30.230482
1612	48120.571910	1612	0.000000
1613	0.000000	1613	1.039330
1614	0.000000	1614	1.039330
1615	185659.371400	1615	0.000000
1616	180303.889339	1616	0.000000
1617	127361.559025	1617	0.000000
1618	-58297.812374	1618	0.000000
1619	167400.671938	1619	0.000000
1620	-12903.217401	1620	0.000000

### 3 Variáveis Duais (Multiplicadores de Lagrange)

Tabela 2: Variáveis duais do problema modszk1

Coordenada y	Valor y
1	1.210840
2	-0.878666
3	0.683620
4	0.471760
5	0.232966
6	0.154938
7	-1.204130
8	0.716719
9	-0.487180
10	-1.620510
11	-0.383570
12	-0.012739
13	-0.047604
14	-0.024140
15	-1.513028
16	-1.843917
17	-0.738566
18	-0.572847
19	1.269284
20	2.640445
21	0.044415
22	4.477330
23	2.319835
24	0.387491
25	-0.017645
26	-2.716360
27	-0.417294
28	22.541654
29	-1.370864
30	-1.370864
31	-1.370864
32	-1.370864
33	-1.370864
34	-0.000000
35	0.882560
36	-0.000000
37	-1.513028
38	-0.000000
39	-1.843917
40	-0.738566
41	-0.572847
42	1.269284
43	2.640445
44	0.044415
45	4.477330
46	2.319835
Continua na próxima página	

Coordenada y	Valor y
47	0.387491
48	-0.017645
49	2.716360
50	-0.000000
51	-0.000000
52	-0.000000
53	-0.000000
54	-0.000000
55	29.524053
56	27.688560
57	28.285730
58	29.145080
59	-0.666166
60	-0.378973
61	1.456520
62	0.859350
63	-0.360396
64	0.382606
65	15.169351
66	10.062760
67	14.946790
68	12.958482
69	11.388673
70	34.692992
71	82.781460
72	6.696251
73	4.787386
74	-8.473100
75	-3.366509
76	-8.250539
77	-6.262230
78	-4.692422
79	-27.996741
80	-76.085209
81	-7.866765
82	-2.706309
83	-0.000000
84	-1.513028
85	-1.843917
86	-0.738566
87	1.269284
88	2.319835
89	0.387491
90	-0.017645
91	-2.716360
92	-0.193386
93	7.163103
94	0.825780
95	0.825780

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Coordenada y	Valor y
96	0.825780
97	0.825780
98	0.825780
99	-0.000000
100	0.359762
101	-0.000000
102	0.909259
103	-0.000000
104	88.248233
105	86.896070
106	85.003551
107	87.493240
108	88.352590
109	0.104356
110	3.349039
111	0.185034
112	0.185025
113	86.943330
114	91.827360
115	97.872065
116	159.662030
117	83.576821
118	-14.295244
119	-3.213761
120	-2.903891
121	-1.513028
122	0.909259
123	-0.572847
124	2.640445
125	0.044415
126	4.477330
127	2.319835
128	0.387491
129	-2.716360
130	0.689147
131	-1.838443
132	-1.788876
133	-1.788876
134	-1.788876
135	-1.788876
136	-1.788876
137	-0.000000
138	0.511430
139	-0.000000
140	-0.000000
141	-43.668120
142	-45.503613
143	-42.686849
144	-44.047093
Continua na próxima página	

Coordenada y	Valor y
145	-1.360244
146	-0.000000
147	-0.000000
148	-5.138220
149	0.023404
150	-1.964905
151	6.068109
152	-8.227135
153	-3.088915
154	-3.088915
155	-1.513028
156	0.909259
157	-1.843917
158	-0.738566
159	-0.572847
160	1.269284
161	2.319835
162	0.387491
163	-0.017645
164	0.055472
165	-2.716360
166	1.901092
167	2.869347
168	-0.704068
169	-0.704068
170	-0.704068
171	-0.704068
172	-0.704068
173	-0.000000
174	0.378090
175	-0.000000
176	0.055472
177	-0.000000
178	15.320120
179	14.836790
180	13.484627
181	11.592108
182	14.761544
183	32.891684
184	14.941146
185	0.179602
186	-17.950538
187	0.083013
188	0.046891
189	-5.212447
190	-5.059700
191	-0.175670
192	-2.216688
193	-3.733787

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Coordenada y	Valor y
194	67.659000
195	-8.426209
196	-6.209521
197	-3.009322
198	-1.843917
199	-0.738566
200	-0.572847
201	1.269284
202	2.640445
203	4.477330
204	2.319835
205	0.055472
206	-2.716360
207	0.546829
208	7.476082
209	-0.514021
210	-0.514021
211	-0.514021
212	-0.514021
213	-0.514021
214	-0.000000
215	-0.394040
216	-0.000000
217	-0.000000
218	-0.000000
219	-0.000000
220	-0.000000
221	17.653673
222	16.301510
223	14.767457
224	19.118273
225	14.408991
226	35.708567
227	17.758030
228	2.990572
229	0.992720
230	17.533480
231	22.417510
232	20.429201
233	37.326577
234	18.859393
235	90.252180
236	14.166971
237	-23.159606
238	-3.904568
239	-0.000000
240	-1.513028
241	-1.843917
242	-0.738566

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Coordenada y	Valor y
243	-0.572847
244	1.269284
245	2.640445
246	4.477330
247	2.319835
248	0.055472
249	-2.716360
250	0.429221
251	9.480110
252	1.154020
253	1.154020
254	1.154020
255	1.154020
256	1.154020
257	-0.000000
258	-0.437410
259	-0.000000
260	-0.000000
261	-12.832126
262	-14.184289
263	-14.137070
264	-15.718342
265	-11.367526
266	-16.076808
267	-13.587119
268	5.222768
269	-12.727769
270	1.409301
271	0.967626
272	-39.807891
273	-34.923861
274	-23.741690
275	-36.912170
276	-20.014794
277	-38.481978
278	32.910809
279	-43.174400
280	-19.432710
281	-5.947187
282	-1.843917
283	-0.738566
284	2.640445
285	0.044415
286	4.477330
287	2.319835
288	-0.017645
289	-2.716360
290	-0.510755
291	6.758998

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Coordenada y	Valor y
292	2.452656
293	2.452656
294	2.452656
295	2.452656
296	2.452656
297	-0.000000
298	-1.021610
299	-0.000000
300	-0.000000
301	49.393123
302	48.040960
303	46.506908
304	50.857724
305	46.148441
306	48.638130
307	49.497480
308	1.588951
309	88.018240
310	92.902270
311	90.913961
312	89.344153
313	160.736940
314	84.651731
315	-3.752203
316	-1.843917
317	-0.738566
318	2.640445
319	0.044415
320	4.477330
321	2.319835
322	-0.017645
323	-2.716360
324	1.880946
325	14.249629
326	0.040008
327	0.040008
328	0.040008
329	0.040008
330	0.040008
331	-0.000000
332	0.680540
333	-0.000000
334	-0.000000
335	13.249440
336	10.363224
337	13.538030
338	14.714040
339	10.004757
340	12.494446
Continua na próxima página	

Coordenada y	Valor y
341	31.304334
342	13.353796
343	-0.184234
344	-0.176164
345	-40.975472
346	-38.079750
347	-24.894200
348	-30.046736
349	-39.649559
350	31.743228
351	-44.341980
352	-19.447780
353	-3.526855
354	-0.738566
355	2.640445
356	0.044415
357	4.477330
358	2.319835
359	-0.017645
360	0.055472
361	-2.716360
362	2.473379
363	17.989491
364	3.982540
365	3.982540
366	3.982540
367	3.982540
368	3.982540
369	-0.000000
370	1.155480
371	-0.000000
372	-0.000000
373	-42.407940
374	-43.760103
375	-42.119350
376	-40.943340
377	-45.652622
378	-24.353046
379	-42.303584
380	-0.680816
381	102.014565
382	106.898595
383	118.080766
384	118.095836
385	112.943300
386	174.733265
387	98.648056
388	-6.290765
389	-1.843917
Continúa na próxima página	

Coordenada y	Valor y
390	-0.738566
391	1.269284
392	0.044415
393	2.319835
394	-0.017645
395	-2.716360
396	-0.327323
397	2.442652
398	2.141231
399	2.141231
400	2.141231
401	2.141231
402	2.141231
403	-0.000000
404	-1.275630
405	-0.000000
406	-0.000000
407	35.927280
408	34.575117
409	33.041064
410	32.682598
411	35.172287
412	34.852573
413	36.031636
414	1.179063
415	1.786511
416	-161.603100
417	-156.719070
418	-145.536899
419	-141.810003
420	-160.277187
421	-161.898647
422	-164.969609
423	-3.070962
424	-6.357080
425	0.909259
426	-1.843917
427	0.387491
428	2.470988
429	-1.270546
430	0.371014
431	0.371014
432	0.371014
433	0.371014
434	0.371014
435	-0.000000
436	0.338340
437	-0.000000
438	-0.000000

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Coordenada y	Valor y
439	-0.000000
440	-0.000000
441	-0.000000
442	-66.222570
443	-65.625400
444	-46.815512
445	-64.766050
446	0.085320
447	6.933618
448	1.674280
449	12.755763
450	4.670039
451	-1.539481
452	-3.017517
453	-0.000000
454	-1.843917
455	0.387491
456	-0.017645
457	-0.321992
458	0.055472
459	-2.716360
460	-0.054999
461	4.428273
462	-0.016693
463	-0.016693
464	-0.016693
465	-0.016693
466	-0.016693
467	-0.000000
468	-0.245760
469	-0.000000
470	-0.321992
471	-0.000000
472	3.695833
473	3.131826
474	3.212503
475	1.860340
476	4.677104
477	-0.032179
478	2.457510
479	3.234155
480	-6.513822
481	3.316860
482	0.082705
483	9.830682
484	0.592865
485	-5.871272
486	-11.130610
487	-6.093833
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Coordenada y	Valor y
488	-8.134851
489	-9.651950
490	61.740837
491	-14.344372
492	-3.088224
493	-0.017645
494	-0.321992
495	1.390351
496	0.055472
497	-2.716360
498	-0.285619
499	4.754517
500	-0.292829
501	-0.292829
502	-0.292829
503	-0.292829
504	-0.292829
505	-0.000000
506	0.436900
507	-0.000000
508	-0.000000
509	1.390351
510	-0.000000
511	-0.000000
512	-0.000000
513	8.851794
514	6.959275
515	9.448964
516	10.225608
517	9.129250
518	10.308313
519	0.033208
520	-40.793213
521	-25.884146
522	-44.351330
523	-21.047011
524	-45.972790
525	-49.043752
526	-5.846279
527	-0.000000
528	-1.843917
529	-0.017645
530	-0.321992
531	1.390351
532	0.055472
533	-2.716360
534	3.204920
535	2.583682
536	1.213637
Continua na próxima página	

Coordenada y	Valor y
537	1.213637
538	1.213637
539	1.213637
540	1.213637
541	-0.000000
542	-0.533570
543	-0.000000
544	-0.000000
545	-2.489447
546	-1.892278
547	-2.211991
548	-10.863610
549	16.917610
550	-1.032928
551	0.977762
552	15.908400
553	14.286940
554	87.301187
555	11.215978
556	-2.626103
557	-1.843917
558	-0.738566
559	2.319835
560	-0.017645
561	-0.321992
562	1.390351
563	0.055472
564	-2.716360
565	1.907258
566	10.301786
567	0.049163
568	0.049163
569	0.049163
570	0.049163
571	0.049163
572	-0.000000
573	-1.326860
574	-0.000000
575	-0.000000
576	-172.195507
577	-173.547670
578	-175.440189
579	-172.950500
580	-172.173855
581	-173.270214
582	-181.921832
583	-154.140612
584	-172.091150
585	2.940750
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Coordenada y	Valor y
586	-292.902430
587	-288.018400
588	-276.836229
589	-273.109333
590	-290.059419
591	-291.576517
592	-268.272198
593	-267.991399
594	-220.183730
595	-296.268939
596	-28.277540
597	-2.675621
598	-1.513028
599	-1.843917
600	-0.738566
601	-0.572847
602	1.269284
603	2.640445
604	0.044415
605	4.477330
606	2.319835
607	0.387491
608	-0.017645
609	-0.321992
610	1.390351
611	0.055472
612	-0.000000
613	-1.513028
614	-1.843917
615	-0.738566
616	-0.572847
617	1.269284
618	2.640445
619	0.044415
620	4.477330
621	2.319835
622	0.387491
623	-0.017645
624	-0.321992
625	1.390351
626	0.055472
627	-0.000000
628	-1.843917
629	-0.738566
630	-0.572847
631	1.269284
632	2.640445
633	0.387491
634	-0.017645

Continua na próxima página

Coordenada y	Valor y
635	-0.321992
636	0.055472
637	-0.000000
638	-1.843917
639	2.640445
640	0.044415
641	0.387491
642	-0.017645
643	-0.321992
644	0.055472
645	-0.000000
646	-1.513028
647	0.909259
648	-1.843917
649	-0.572847
650	2.640445
651	0.044415
652	2.319835
653	0.387491
654	-0.017645
655	-0.321992
656	1.390351
657	0.055472
658	-0.000000
659	-1.513028
660	0.909259
661	-1.843917
662	-0.572847
663	1.269284
664	2.640445
665	0.044415
666	4.477330
667	2.319835
668	0.387491
669	-0.017645
670	-0.321992
671	0.055472
672	-0.000000
673	-1.513028
674	-1.843917
675	-0.572847
676	1.269284
677	0.044415
678	4.477330
679	2.319835
680	0.387491
681	-0.017645
682	-0.321992
683	1.390351

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Coordenada y	Valor y
684	0.055472
685	-0.000000
686	-0.000000
687	-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 modszk1.
- As variáveis duais representam os multiplicadores de Lagrange das restrições.
- Os custos reduzidos (z) indicam o impacto de forçar variáveis não-básicas na base.