

# Solução do Problema ship08s - Solver HiGHS

Análise Computacional

16 de setembro de 2025

## 1 Informações do Problema

### Informações do Problema:

- Nome: ship08s
- Número de Variáveis: 2387
- Número de Restrições: 778
- Inviabilidade Primal: 0.000e+00
- Inviabilidade Dual: 0.000e+00
- Valor Primal: 1.920e+06
- Valor Dual: 1.920e+06
- Gap: 2.526e-22
- Número de Iterações: 14

## 2 Variáveis Primais e Custos Reduzidos

Tabela 1: Variáveis primais e custos reduzidos do problema ship08s

Coordenada x	Valor x	Coordenada z	Valor z
1	6.320513	1	0.000000
2	49.617481	2	0.000000
3	31.575260	3	0.000000
4	39.156147	4	0.000000
5	48.831960	5	0.000000
6	32.824756	6	0.000000
7	71.809518	7	0.000000
8	14.999999	8	0.000000
9	42.979489	9	0.000000
10	24.350542	10	0.000000
11	-0.000000	11	0.000000
12	16.434332	12	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
13	14.300002	13	0.000000
14	-0.000000	14	0.000000
15	0.000000	15	1131.360686
16	0.000000	16	1198.133563
17	0.000000	17	1217.133563
18	0.000000	18	1205.133563
19	0.000000	19	887.216085
20	0.000000	20	1261.573563
21	0.000000	21	1159.733563
22	0.000000	22	1046.028709
23	0.000000	23	638.133563
24	0.000000	24	636.574810
25	0.000000	25	689.789099
26	0.000000	26	624.574810
27	0.000000	27	673.574810
28	0.000000	28	882.037124
29	0.000000	29	415.517124
30	0.000000	30	39.947124
31	0.000000	31	460.207124
32	0.000000	32	379.547124
33	0.000000	33	111.407124
34	0.000000	34	114.352876
35	0.000000	35	265.480000
36	2.738891	36	0.000000
37	0.000000	37	529.260000
38	0.000000	38	173.920000
39	0.000000	39	43.120000
40	0.000000	40	131.792876
41	0.000000	41	861.710000
42	-0.000000	42	0.000000
43	0.000000	43	298.180000
44	0.000000	44	127.050000
45	0.000000	45	20.230000
46	0.000000	46	454.432876
47	0.000000	47	1293.350000
48	0.000000	48	742.900000
49	0.000000	49	736.360000
50	0.000000	50	696.030000
51	0.000000	51	205.530000
52	0.000000	52	248.422876
53	0.000000	53	996.870000
54	0.000000	54	476.940000
55	3.002244	55	0.000000
56	0.000000	56	473.670000
57	0.000000	57	497.650000
58	0.000000	58	127.050000
59	0.263355	59	0.000000
60	0.000000	60	62.032876
61	0.000000	61	837.730000

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Coordenada x	Valor x	Coordenada z	Valor z
62	0.000000	62	387.560000
63	1.158760	63	0.000000
64	0.000000	64	412.630000
65	0.000000	65	339.600000
66	0.000000	66	471.490000
67	0.000000	67	85.630000
68	0.000000	68	67.482876
69	0.000000	69	885.690000
70	0.000000	70	362.490000
71	0.948077	71	0.000000
72	0.000000	72	317.800000
73	0.000000	73	340.690000
74	0.000000	74	76.910000
75	0.421368	75	0.000000
76	0.000000	76	142.692876
77	0.000000	77	525.990000
78	0.000000	78	348.320000
79	0.579380	79	0.000000
80	0.000000	80	416.990000
81	0.000000	81	282.920000
82	0.000000	82	83.450000
83	0.632051	83	0.000000
84	0.526709	84	0.000000
85	0.421368	85	0.000000
86	0.000000	86	214.347124
87	0.000000	87	76.202876
88	0.000000	88	399.550000
89	0.000000	89	214.250000
90	1.211430	90	0.000000
91	0.000000	91	303.630000
92	0.000000	92	115.060000
93	0.000000	93	30.040000
94	0.000000	94	124.162876
95	0.000000	95	737.450000
96	0.000000	96	412.630000
97	0.948077	97	0.000000
98	0.000000	98	423.530000
99	0.000000	99	258.940000
100	0.000000	100	52.930000
101	0.000000	101	257.622876
102	1.053420	102	0.000000
103	0.421368	103	0.000000
104	0.000000	104	361.782876
105	0.000000	105	1320.600000
106	0.000000	106	650.250000
107	0.684722	107	0.000000
108	0.000000	108	442.060000
109	0.000000	109	631.720000
110	0.000000	110	76.910000

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Coordenada x	Valor x	Coordenada z	Valor z
111	0.000000	111	365.052876
112	0.000000	112	1366.380000
113	0.000000	113	678.590000
114	1.158760	114	0.000000
115	0.000000	115	582.670000
116	0.000000	116	156.480000
117	0.000000	117	355.242876
118	0.000000	118	797.400000
119	0.000000	119	615.370000
120	1.106090	120	0.000000
121	0.000000	121	639.350000
122	0.000000	122	142.310000
123	0.684722	123	0.000000
124	0.579380	124	0.000000
125	0.052671	125	0.000000
126	0.684722	126	0.000000
127	0.210684	127	0.000000
128	0.316026	128	0.000000
129	0.000000	129	29.812876
130	0.895406	130	0.000000
131	0.474038	131	0.000000
132	0.842735	132	0.000000
133	0.579380	133	0.000000
134	1.000750	134	0.000000
135	0.000000	135	317.092876
136	0.000000	136	696.030000
137	0.000000	137	584.850000
138	1.158760	138	0.000000
139	0.000000	139	591.390000
140	0.000000	140	72.550000
141	0.000000	141	455.522876
142	0.000000	142	1229.040000
143	0.000000	143	796.310000
144	1.053420	144	0.000000
145	0.000000	145	639.350000
146	0.000000	146	198.990000
147	0.632051	147	0.000000
148	0.368697	148	0.000000
149	0.000000	149	33.692876
150	0.000000	150	786.500000
151	0.000000	151	318.890000
152	1.948820	152	0.000000
153	0.000000	153	255.670000
154	0.000000	154	309.080000
155	0.000000	155	85.630000
156	0.000000	156	77.292876
157	0.000000	157	675.320000
158	0.000000	158	245.860000
159	1.790810	159	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
160	0.000000	160	355.950000
161	0.000000	161	135.770000
162	0.000000	162	343.960000
163	0.000000	163	64.920000
164	0.368697	164	0.000000
165	0.000000	165	120.892876
166	0.000000	166	833.370000
167	0.000000	167	266.570000
168	1.106090	168	0.000000
169	0.000000	169	305.810000
170	0.000000	170	248.040000
171	0.000000	171	117.240000
172	0.737393	172	0.000000
173	0.263355	173	0.000000
174	0.000000	174	115.442876
175	0.000000	175	852.990000
176	0.000000	176	182.640000
177	1.527460	177	0.000000
178	0.000000	178	347.230000
179	0.000000	179	215.340000
180	0.000000	180	384.290000
181	0.000000	181	115.060000
182	0.895406	182	0.000000
183	0.000000	183	133.972876
184	0.000000	184	902.040000
185	0.000000	185	335.240000
186	1.369440	186	0.000000
187	0.000000	187	325.430000
188	0.000000	188	318.890000
189	0.000000	189	340.690000
190	0.000000	190	156.480000
191	0.000000	191	44.592876
192	0.000000	192	555.420000
193	0.000000	193	231.690000
194	0.895406	194	0.000000
195	0.000000	195	370.120000
196	0.000000	196	221.880000
197	0.000000	197	143.400000
198	0.632051	198	0.000000
199	0.526709	199	0.000000
200	0.000000	200	69.052876
201	0.368697	201	0.000000
202	0.526709	202	0.000000
203	0.000000	203	103.932876
204	0.421368	204	0.000000
205	0.000000	205	35.872876
206	0.000000	206	721.100000
207	0.000000	207	216.430000
208	2.317522	208	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
209	0.000000	209	359.220000
210	0.000000	210	67.100000
211	0.000000	211	207.002876
212	0.000000	212	989.240000
213	0.000000	213	383.200000
214	1.000750	214	0.000000
215	0.000000	215	140.130000
216	0.000000	216	371.210000
217	0.000000	217	154.300000
218	0.000000	218	132.500000
219	0.421368	219	0.000000
220	0.000000	220	247.332876
221	0.000000	221	946.730000
222	0.000000	222	463.860000
223	1.106090	223	0.000000
224	0.000000	224	236.050000
225	0.000000	225	424.620000
226	0.000000	226	240.410000
227	0.000000	227	142.310000
228	0.000000	228	152.982876
229	0.790064	229	0.000000
230	0.684722	230	0.000000
231	0.000000	231	22.507124
232	0.000000	232	211.362876
233	0.000000	233	939.100000
234	0.000000	234	407.180000
235	2.001500	235	0.000000
236	0.000000	236	37.670000
237	0.000000	237	410.450000
238	0.000000	238	144.490000
239	0.000000	239	45.300000
240	0.000000	240	223.352876
241	0.000000	241	1021.940000
242	0.000000	242	471.490000
243	1.211430	243	0.000000
244	0.000000	244	296.000000
245	0.000000	245	486.750000
246	0.000000	246	292.730000
247	0.000000	247	154.300000
248	0.000000	248	209.182876
249	0.000000	249	1004.500000
250	0.000000	250	446.420000
251	1.211430	251	0.000000
252	0.000000	252	195.720000
253	0.000000	253	440.970000
254	0.000000	254	200.080000
255	0.000000	255	128.140000
256	0.000000	256	0.382876
257	0.526709	257	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
258	0.000000	258	115.442876
259	0.000000	259	952.180000
260	0.000000	260	354.860000
261	-0.000000	261	0.000000
262	0.000000	262	85.630000
263	0.000000	263	408.270000
264	0.000000	264	48.570000
265	0.210684	265	0.000000
266	0.263355	266	0.000000
267	0.210684	267	0.000000
268	0.105342	268	0.000000
269	0.158013	269	0.000000
270	0.000000	270	176.482876
271	0.000000	271	481.300000
272	0.948077	272	0.000000
273	0.000000	273	454.050000
274	0.000000	274	287.280000
275	0.000000	275	643.710000
276	0.000000	276	155.390000
277	0.210684	277	0.000000
278	0.000000	278	191.742876
279	0.000000	279	644.800000
280	0.000000	280	348.320000
281	0.158013	281	0.000000
282	0.000000	282	505.280000
283	0.000000	283	263.300000
284	0.000000	284	193.540000
285	0.105342	285	0.000000
286	0.210684	286	0.000000
287	0.052671	287	0.000000
288	0.000000	288	301.832876
289	0.000000	289	604.470000
290	0.000000	290	543.430000
291	1.000750	291	0.000000
292	0.000000	292	561.960000
293	0.000000	293	54.020000
294	0.000000	294	347.612876
295	0.000000	295	480.210000
296	0.000000	296	584.850000
297	0.842735	297	0.000000
298	0.000000	298	600.110000
299	0.000000	299	230.600000
300	0.105342	300	0.000000
301	0.263355	301	0.000000
302	0.000000	302	129.612876
303	0.000000	303	334.150000
304	0.000000	304	422.440000
305	0.316026	305	0.000000
306	0.000000	306	869.340000

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Coordenada x	Valor x	Coordenada z	Valor z
307	0.000000	307	226.240000
308	0.000000	308	393.392876
309	0.000000	309	1247.570000
310	0.000000	310	710.200000
311	1.053420	311	0.000000
312	0.000000	312	702.570000
313	0.000000	313	634.990000
314	0.316026	314	0.000000
315	0.000000	315	84.197478
316	0.000000	316	496.877478
317	0.000000	317	255.478752
318	0.000000	318	706.680000
319	0.000000	319	322.157478
320	0.000000	320	326.038752
321	0.000000	321	871.842522
322	0.000000	322	1156.680000
323	0.000000	323	1040.521274
324	0.000000	324	1615.722522
325	0.000000	325	918.720000
326	0.000000	326	1078.841274
327	0.000000	327	26.282522
328	0.000000	328	26.160000
329	0.000000	329	175.121274
330	0.000000	330	487.442522
331	-0.000000	331	0.000000
332	0.000000	332	187.401274
333	0.000000	333	218.201248
334	0.000000	334	342.078726
335	0.000000	335	659.278726
336	0.000000	336	810.801248
337	0.000000	337	472.158726
338	0.000000	338	223.080000
339	-0.000000	339	0.000000
340	0.000000	340	20.957478
341	0.000000	341	372.877478
342	0.000000	342	16.158752
343	0.000000	343	235.357478
344	0.000000	344	404.120000
345	0.000000	345	149.958752
346	1.178250	346	0.000000
347	3.796590	347	0.000000
348	0.000000	348	51.957478
349	0.000000	349	483.237478
350	0.000000	350	228.198752
351	0.000000	351	670.720000
352	0.000000	352	294.877478
353	0.000000	353	586.400000
354	0.000000	354	314.878752
355	2.749250	355	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
356	0.000000	356	100.317478
357	0.000000	357	448.517478
358	0.000000	358	221.998752
359	0.000000	359	556.640000
360	0.000000	360	289.917478
361	0.000000	361	298.758752
362	1.571000	362	0.000000
363	0.000000	363	394.442522
364	2.094670	364	0.000000
365	0.000000	365	741.280000
366	0.000000	366	530.881274
367	0.000000	367	978.362522
368	0.000000	368	533.080000
369	0.000000	369	615.081274
370	1.963750	370	0.000000
371	1.832840	371	0.000000
372	1.701920	372	0.000000
373	0.000000	373	222.957478
374	0.000000	374	462.642522
375	6.153090	375	0.000000
376	0.000000	376	732.600000
377	0.000000	377	674.721274
378	0.000000	378	993.242522
379	0.000000	379	485.960000
380	0.000000	380	698.161274
381	0.000000	381	132.802522
382	2.094670	382	0.000000
383	0.000000	383	573.880000
384	0.000000	384	290.321274
385	0.000000	385	745.242522
386	0.000000	386	265.240000
387	0.000000	387	339.801274
388	0.000000	388	5.041248
389	2.094670	389	0.000000
390	1.571000	390	0.000000
391	0.000000	391	112.801248
392	0.000000	392	373.078726
393	0.000000	393	553.878726
394	3.011090	394	0.000000
395	0.000000	395	476.001248
396	0.000000	396	398.998726
397	0.000000	397	76.760000
398	0.000000	398	116.521248
399	0.000000	399	425.158726
400	0.000000	400	586.118726
401	3.011090	401	0.000000
402	0.000000	402	635.961248
403	0.000000	403	167.280000
404	0.000000	404	327.482522

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Coordenada x	Valor x	Coordenada z	Valor z
405	3.142000	405	0.000000
406	0.000000	406	736.320000
407	0.000000	407	222.121274
408	0.000000	408	922.562522
409	0.000000	409	373.281274
410	2.225590	410	0.000000
411	2.225590	411	0.000000
412	0.130917	412	0.000000
413	1.309170	413	0.000000
414	0.523667	414	0.000000
415	1.178250	415	0.000000
416	1.571000	416	0.000000
417	0.000000	417	237.960000
418	1.309170	418	0.000000
419	1.571000	419	0.000000
420	1.571000	420	0.000000
421	1.963750	421	0.000000
422	0.000000	422	399.402522
423	2.749250	423	0.000000
424	0.000000	424	816.920000
425	0.000000	425	337.441274
426	0.000000	426	983.322522
427	0.000000	427	409.241274
428	0.000000	428	219.441248
429	0.000000	429	268.918726
430	0.000000	430	720.038726
431	2.094670	431	0.000000
432	0.000000	432	700.441248
433	0.000000	433	215.640000
434	1.309170	434	0.000000
435	0.654584	435	0.000000
436	3.665670	436	0.000000
437	0.000000	437	25.917478
438	0.000000	438	437.357478
439	0.000000	439	260.438752
440	0.000000	440	524.400000
441	0.000000	441	292.397478
442	0.000000	442	347.118752
443	0.000000	443	150.162522
444	3.142000	444	0.000000
445	0.000000	445	454.840000
446	0.000000	446	361.001274
447	0.000000	447	739.042522
448	0.000000	448	195.800000
449	0.000000	449	574.122522
450	0.000000	450	424.121274
451	1.571000	451	0.000000
452	0.000000	452	19.962522
453	1.701920	453	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
454	0.000000	454	298.600000
455	0.000000	455	181.201274
456	0.000000	456	502.202522
457	0.000000	457	143.720000
458	0.000000	458	303.841274
459	1.178250	459	0.000000
460	1.309170	460	0.000000
461	4.189340	461	0.000000
462	0.000000	462	8.557478
463	0.000000	463	189.357478
464	0.000000	464	167.438752
465	0.000000	465	535.560000
466	0.000000	466	92.757478
467	0.000000	467	426.440000
468	0.000000	468	287.598752
469	1.178250	469	0.000000
470	2.225590	470	0.000000
471	0.000000	471	43.277478
472	0.000000	472	341.877478
473	0.000000	473	146.358752
474	0.000000	474	489.680000
475	0.000000	475	189.477478
476	0.000000	476	355.760000
477	0.000000	477	313.638752
478	0.000000	478	249.362522
479	2.094670	479	0.000000
480	0.000000	480	575.120000
481	0.000000	481	497.401274
482	0.000000	482	891.562522
483	0.000000	483	430.160000
484	0.000000	484	649.801274
485	1.440090	485	0.000000
486	1.047330	486	0.000000
487	0.654584	487	0.000000
488	0.000000	488	193.320000
489	0.785501	489	0.000000
490	0.523667	490	0.000000
491	0.000000	491	153.640000
492	0.000000	492	50.962522
493	4.189334	493	0.000000
494	0.000000	494	369.280000
495	0.000000	495	308.921274
496	0.000000	496	690.682522
497	0.000000	497	374.521274
498	2.225590	498	0.000000
499	0.000000	499	59.397478
500	0.000000	500	313.357478
501	0.000000	501	63.278752
502	0.000000	502	195.800000

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Coordenada x	Valor x	Coordenada z	Valor z
503	0.000000	503	165.917478
504	0.000000	504	60.640000
505	0.000000	505	203.278752
506	0.654584	506	0.000000
507	0.000000	507	34.842522
508	1.832840	508	0.000000
509	0.000000	509	394.080000
510	0.000000	510	52.241274
511	0.000000	511	293.882522
512	0.000000	512	215.640000
513	0.000000	513	147.562522
514	0.000000	514	203.401274
515	1.571000	515	0.000000
516	0.000000	516	97.840000
517	1.309170	517	0.000000
518	0.000000	518	297.480000
519	0.000000	519	2.602522
520	3.272920	520	0.000000
521	0.000000	521	338.280000
522	0.000000	522	60.921274
523	0.000000	523	76.882522
524	0.000000	524	208.200000
525	0.000000	525	47.122522
526	0.000000	526	101.721274
527	2.356500	527	0.000000
528	0.000000	528	77.997478
529	0.000000	529	395.197478
530	0.000000	530	44.678752
531	0.000000	531	354.520000
532	0.000000	532	278.757478
533	0.000000	533	199.520000
534	0.000000	534	209.478752
535	1.832840	535	0.000000
536	0.000000	536	74.277478
537	0.000000	537	382.797478
538	0.000000	538	60.798752
539	0.000000	539	256.560000
540	0.000000	540	242.797478
541	0.000000	541	110.240000
542	0.000000	542	195.838752
543	0.785501	543	0.000000
544	0.000000	544	271.440000
545	-0.000000	545	0.000000
546	0.000000	546	121.397478
547	0.000000	547	385.277478
548	0.000000	548	167.438752
549	0.000000	549	237.960000
550	0.000000	550	312.237478
551	0.000000	551	211.958752

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Coordenada x	Valor x	Coordenada z	Valor z
552	0.916418	552	0.000000
553	0.916418	553	0.000000
554	0.785501	554	0.000000
555	0.261834	555	0.000000
556	0.654584	556	0.000000
557	3.272920	557	0.000000
558	0.000000	558	459.677478
559	0.000000	559	97.998752
560	0.000000	560	587.640000
561	0.000000	561	105.157478
562	0.000000	562	652.120000
563	0.000000	563	264.038752
564	0.392751	564	0.000000
565	0.000000	565	315.082522
566	1.047330	566	0.000000
567	0.000000	567	606.120000
568	0.000000	568	395.721274
569	0.000000	569	943.642522
570	0.000000	570	375.600000
571	0.000000	571	605.161274
572	0.523667	572	0.000000
573	0.523667	573	0.000000
574	0.392751	574	0.000000
575	0.000000	575	486.202522
576	3.534750	576	0.000000
577	0.000000	577	873.960000
578	0.000000	578	441.601274
579	0.000000	579	1054.002522
580	0.000000	580	492.321274
581	0.000000	581	679.642522
582	2.094670	582	0.000000
583	0.000000	583	1062.440000
584	0.000000	584	582.961274
585	0.000000	585	1238.762522
586	0.000000	586	834.561274
587	0.392751	587	0.000000
588	0.654584	588	0.000000
589	0.000000	589	597.802522
590	1.047330	590	0.000000
591	0.000000	591	1043.840000
592	0.000000	592	749.121274
593	0.000000	593	1711.202522
594	0.000000	594	995.761274
595	0.000000	595	148.761248
596	0.000000	596	289.998726
597	0.000000	597	622.078726
598	2.094670	598	0.000000
599	0.000000	599	772.361248
600	0.000000	600	402.718726

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Coordenada x	Valor x	Coordenada z	Valor z
601	1.309170	601	0.000000
602	0.000000	602	624.840000
603	0.000000	603	601.160000
604	0.000000	604	629.680000
605	0.000000	605	784.680000
606	0.000000	606	451.120000
607	0.000000	607	552.800000
608	0.000000	608	409.200000
609	0.000000	609	720.320000
610	0.000000	610	874.080000
611	0.000000	611	1153.080000
612	0.000000	612	507.040000
613	0.000000	613	764.960000
614	-0.000000	614	0.000000
615	0.000000	615	462.520000
616	0.000000	616	445.040000
617	0.000000	617	461.160000
618	0.000000	618	24.680000
619	0.000000	619	309.880000
620	0.134728	620	0.000000
621	0.000000	621	586.520000
622	0.000000	622	467.360000
623	0.000000	623	592.600000
624	0.000000	624	304.920000
625	0.000000	625	153.640000
626	-0.000000	626	0.000000
627	0.000000	627	483.600000
628	0.000000	628	399.160000
629	0.000000	629	312.360000
630	0.000000	630	286.320000
631	0.000000	631	404.120000
632	0.000000	632	298.720000
633	0.000000	633	5583.626437
634	0.471548	634	0.000000
635	0.000000	635	514.600000
636	0.000000	636	509.520000
637	0.000000	637	524.400000
638	0.000000	638	670.720000
639	0.000000	639	345.840000
640	0.000000	640	586.400000
641	0.000000	641	463.640000
642	0.404184	642	0.000000
643	0.000000	643	562.960000
644	0.000000	644	474.800000
645	0.000000	645	518.200000
646	0.000000	646	556.640000
647	0.000000	647	340.880000
648	0.000000	648	447.520000
649	0.134728	649	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
650	1.482010	650	0.000000
651	0.000000	651	68.200000
652	0.000000	652	373.120000
653	0.000000	653	432.640000
654	0.000000	654	583.920000
655	0.000000	655	189.600000
656	0.000000	656	369.400000
657	0.067364	657	0.000000
658	0.067364	658	0.000000
659	-0.000000	659	0.000000
660	0.000000	660	273.920000
661	5.235936	661	0.000000
662	2.713014	662	0.000000
663	0.000000	663	296.240000
664	0.000000	664	508.280000
665	0.000000	665	530.600000
666	0.000000	666	74.280000
667	0.000000	667	384.280000
668	0.202092	668	0.000000
669	0.000000	669	329.840000
670	0.000000	670	467.360000
671	0.000000	671	453.720000
672	0.000000	672	612.440000
673	0.000000	673	183.400000
674	0.000000	674	355.760000
675	-0.000000	675	0.000000
676	0.000000	676	143.720000
677	0.000000	677	5821.586437
678	0.000000	678	5644.386437
679	0.000000	679	6367.306437
680	0.000000	680	6111.746437
681	0.000000	681	5827.786437
682	0.000000	682	6007.586437
683	0.000000	683	5981.546437
684	0.000000	684	5757.106437
685	0.000000	685	5591.066437
686	0.000000	686	6362.346437
687	0.000000	687	6086.946437
688	0.000000	688	5770.746437
689	0.000000	689	6110.506437
690	0.000000	690	5790.586437
691	0.134728	691	0.000000
692	0.000000	692	135.160000
693	0.000000	693	435.120000
694	0.000000	694	190.840000
695	0.000000	695	595.080000
696	0.000000	696	194.560000
697	0.000000	697	5908.386437
698	0.000000	698	5837.706437

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Coordenada x	Valor x	Coordenada z	Valor z
699	0.000000	699	7117.506437
700	0.000000	700	6044.906437
701	0.000000	701	5965.426437
702	0.875732	702	0.000000
703	-0.000000	703	0.000000
704	0.000000	704	237.960000
705	0.134728	705	0.000000
706	0.000000	706	6007.586437
707	0.269456	707	0.000000
708	0.000000	708	5825.306437
709	0.269456	709	0.000000
710	0.000000	710	63.240000
711	0.000000	711	443.800000
712	0.000000	712	234.240000
713	0.000000	713	583.920000
714	0.000000	714	158.600000
715	0.000000	715	5815.506437
716	0.000000	716	6327.626437
717	0.000000	717	6342.386437
718	0.000000	718	5892.266437
719	0.000000	719	6296.506437
720	0.000000	720	5960.466437
721	0.000000	721	5781.906437
722	0.875732	722	0.000000
723	0.875732	723	0.000000
724	0.000000	724	488.560000
725	0.000000	725	463.640000
726	0.000000	726	556.640000
727	0.000000	727	524.400000
728	0.000000	728	343.360000
729	0.000000	729	495.880000
730	0.134728	730	0.000000
731	0.000000	731	312.480000
732	0.000000	732	330.960000
733	0.000000	733	507.040000
734	0.000000	734	588.880000
735	0.000000	735	96.600000
736	0.000000	736	423.960000
737	0.000000	737	422.720000
738	0.134728	738	0.000000
739	0.336820	739	0.000000
740	0.000000	740	442.680000
741	0.000000	741	304.920000
742	0.000000	742	457.440000
743	0.000000	743	482.240000
744	0.000000	744	174.720000
745	0.000000	745	432.640000
746	0.538912	746	0.000000
747	0.067364	747	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
748	3.705020	748	0.000000
749	0.000000	749	471.200000
750	0.000000	750	215.640000
751	0.000000	751	463.640000
752	0.000000	752	535.560000
753	0.000000	753	143.720000
754	0.000000	754	426.440000
755	0.000000	755	436.360000
756	1.549370	756	0.000000
757	0.404184	757	0.000000
758	0.000000	758	505.920000
759	0.000000	759	368.160000
760	0.000000	760	442.560000
761	0.000000	761	489.680000
762	0.000000	762	240.440000
763	0.000000	763	355.760000
764	0.000000	764	462.400000
765	3.031380	765	0.000000
766	0.000000	766	213.280000
767	0.000000	767	352.040000
768	0.000000	768	544.240000
769	0.000000	769	642.200000
770	0.000000	770	231.760000
771	0.000000	771	549.200000
772	0.404184	772	0.000000
773	0.067364	773	0.000000
774	-0.000000	774	0.000000
775	0.000000	775	193.320000
776	0.000000	776	5635.706437
777	-0.000000	777	0.000000
778	0.000000	778	153.640000
779	3.839746	779	0.000000
780	0.000000	780	411.680000
781	0.000000	781	344.600000
782	0.000000	782	554.160000
783	0.000000	783	639.720000
784	0.000000	784	472.320000
785	0.000000	785	5782.026437
786	0.000000	786	6304.066437
787	0.000000	787	6121.666437
788	0.000000	788	6141.506437
789	0.000000	789	5977.826437
790	0.000000	790	5998.906437
791	0.000000	791	5842.666437
792	0.000000	792	6134.066437
793	0.067364	793	0.000000
794	0.134728	794	0.000000
795	0.000000	795	427.800000
796	0.000000	796	385.520000

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Coordenada x	Valor x	Coordenada z	Valor z
797	0.000000	797	313.600000
798	0.000000	798	259.040000
799	0.000000	799	231.760000
800	0.000000	800	112.720000
801	0.000000	801	317.320000
802	-0.000000	802	0.000000
803	0.000000	803	97.840000
804	-0.000000	804	0.000000
805	0.000000	805	297.480000
806	0.067364	806	0.000000
807	0.000000	807	460.040000
808	0.000000	808	361.960000
809	0.000000	809	354.520000
810	0.000000	810	74.280000
811	0.000000	811	256.560000
812	0.000000	812	44.520000
813	0.000000	813	247.880000
814	0.000000	814	5592.306437
815	0.000000	815	6132.946437
816	0.000000	816	6013.786437
817	0.000000	817	5933.186437
818	0.000000	818	5946.826437
819	0.000000	819	5922.026437
820	0.000000	820	5791.826437
821	0.000000	821	5950.546437
822	0.000000	822	5660.506437
823	0.000000	823	6197.426437
824	0.000000	824	6069.586437
825	0.000000	825	6017.506437
826	0.000000	826	5917.066437
827	0.000000	827	5954.266437
828	0.000000	828	5770.746437
829	0.000000	829	6005.106437
830	-0.000000	830	0.000000
831	0.000000	831	271.440000
832	-0.000000	832	0.000000
833	0.000000	833	584.040000
834	0.000000	834	411.560000
835	0.000000	835	463.640000
836	0.000000	836	237.960000
837	0.000000	837	363.200000
838	0.000000	838	360.720000
839	0.134728	839	0.000000
840	1.347280	840	0.000000
841	0.404184	841	0.000000
842	1.751460	842	0.000000
843	1.886190	843	0.000000
844	5.725940	844	0.000000
845	0.000000	845	485.960000

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Coordenada x	Valor x	Coordenada z	Valor z
846	0.000000	846	394.200000
847	0.000000	847	587.640000
848	0.000000	848	156.120000
849	0.000000	849	652.120000
850	0.000000	850	412.800000
851	0.673640	851	0.000000
852	3.705020	852	0.000000
853	0.000000	853	147.560000
854	0.000000	854	317.320000
855	0.000000	855	376.840000
856	0.000000	856	628.560000
857	0.000000	857	111.480000
858	0.000000	858	438.840000
859	1.953560	859	0.000000
860	0.269456	860	0.000000
861	1.616740	861	0.000000
862	0.000000	862	23.560000
863	1.414640	863	0.000000
864	0.000000	864	437.600000
865	0.000000	865	275.160000
866	0.000000	866	591.360000
867	0.000000	867	178.440000
868	0.000000	868	217.000000
869	2.223010	869	0.000000
870	0.000000	870	626.080000
871	0.000000	871	416.520000
872	0.000000	872	776.120000
873	0.000000	873	520.680000
874	3.166110	874	0.000000
875	0.000000	875	6094.386437
876	0.000000	876	135.160000
877	11.856100	877	0.000000
878	0.000000	878	607.480000
879	0.000000	879	582.680000
880	0.000000	880	1248.560000
881	0.000000	881	681.880000
882	-0.000000	882	0.000000
883	0.000000	883	603.880000
884	0.000000	884	499.600000
885	0.000000	885	147.440000
886	0.000000	886	623.600000
887	0.000000	887	304.920000
888	1.347280	888	0.000000
889	0.000000	889	981.710000
890	0.000000	890	506.000000
891	0.000000	891	588.820000
892	0.000000	892	715.070000
893	0.000000	893	325.720000
894	0.000000	894	526.200000

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Coordenada x	Valor x	Coordenada z	Valor z
895	-0.000000	895	0.000000
896	0.000000	896	231.790000
897	0.000000	897	416.620000
898	0.000000	898	643.870000
899	-0.000000	899	0.000000
900	0.000000	900	327.740000
901	0.000000	901	59.590000
902	0.000000	902	871.120000
903	0.000000	903	460.050000
904	0.000000	904	473.180000
905	-0.000000	905	0.000000
906	0.000000	906	349.960000
907	-0.000000	907	0.000000
908	0.000000	908	912.530000
909	0.000000	909	359.050000
910	0.000000	910	520.650000
911	0.000000	911	168.670000
912	0.000000	912	163.110000
913	-0.000000	913	0.000000
914	0.000000	914	828.700000
915	0.000000	915	303.500000
916	0.000000	916	292.390000
917	0.000000	917	153.520000
918	-0.000000	918	0.000000
919	0.000000	919	281.280000
920	0.000000	920	7344.960901
921	0.000000	921	7165.180901
922	0.000000	922	8019.130901
923	0.000000	923	7558.570901
924	0.000000	924	7630.280901
925	0.000000	925	7749.460901
926	0.000000	926	7367.180901
927	0.000000	927	7313.650901
928	0.000000	928	7580.790901
929	0.000000	929	7210.630901
930	0.000000	930	8103.970901
931	0.000000	931	7575.740901
932	0.000000	932	7670.680901
933	0.000000	933	7701.990901
934	0.000000	934	7408.590901
935	0.000000	935	7613.110901
936	0.000000	936	7283.350901
937	0.000000	937	7393.440901
938	0.000000	938	7883.790901
939	0.000000	939	7675.730901
940	0.000000	940	7783.800901
941	0.000000	941	7907.020901
942	0.000000	942	7468.180901
943	0.000000	943	7732.290901

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Coordenada x	Valor x	Coordenada z	Valor z
944	0.000000	944	7251.030901
945	0.000000	945	7232.850901
946	-0.000000	946	0.000000
947	0.000000	947	143.420000
948	0.000000	948	7450.000901
949	0.000000	949	7884.800901
950	0.000000	950	7669.670901
951	0.000000	951	7901.970901
952	0.000000	952	7920.150901
953	0.000000	953	7430.810901
954	0.000000	954	7800.970901
955	0.000000	955	7303.550901
956	0.000000	956	8007.010901
957	0.000000	957	7662.600901
958	0.000000	958	7711.080901
959	0.000000	959	7840.360901
960	0.000000	960	7373.240901
961	0.000000	961	7631.290901
962	-0.000000	962	0.000000
963	0.000000	963	155.030000
964	0.000000	964	7576.750901
965	0.000000	965	7394.450901
966	0.000000	966	8418.080901
967	0.000000	967	7753.500901
968	0.000000	968	7581.800901
969	0.000000	969	7728.250901
970	0.000000	970	7589.380901
971	0.000000	971	7524.230901
972	0.000000	972	7351.020901
973	0.000000	973	8414.040901
974	0.000000	974	7733.300901
975	0.000000	975	7535.340901
976	0.000000	976	7812.080901
977	0.000000	977	7551.500901
978	0.000000	978	7551.000901
979	0.000000	979	8095.890901
980	0.000000	980	7883.790901
981	0.000000	981	7744.410901
982	0.000000	982	8073.670901
983	0.000000	983	7747.440901
984	0.000000	984	7647.450901
985	0.000000	985	7589.880901
986	0.000000	986	8594.330901
987	0.000000	987	8155.480901
988	0.000000	988	7693.910901
989	0.000000	989	7511.610901
990	-0.000000	990	0.000000
991	0.000000	991	231.790000
992	0.000000	992	7622.200901

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Coordenada x	Valor x	Coordenada z	Valor z
993	0.000000	993	7728.250901
994	0.000000	994	7256.080901
995	0.000000	995	7579.780901
996	0.000000	996	7641.900901
997	0.000000	997	8128.210901
998	0.000000	998	7981.760901
999	0.000000	999	7870.660901
1000	0.000000	1000	8155.480901
1001	0.000000	1001	7809.050901
1002	0.000000	1002	7533.830901
1003	0.000000	1003	8385.760901
1004	0.000000	1004	7941.360901
1005	0.000000	1005	7634.320901
1006	0.000000	1006	7963.580901
1007	0.000000	1007	7689.870901
1008	0.000000	1008	7544.430901
1009	0.000000	1009	7352.030901
1010	0.000000	1010	7236.890901
1011	0.000000	1011	8069.630901
1012	0.000000	1012	7592.910901
1013	0.000000	1013	7728.250901
1014	0.000000	1014	7701.990901
1015	0.000000	1015	7436.870901
1016	0.000000	1016	7678.760901
1017	0.000000	1017	7281.330901
1018	0.000000	1018	7970.650901
1019	0.000000	1019	7529.280901
1020	0.000000	1020	7732.290901
1021	0.000000	1021	7798.950901
1022	0.000000	1022	7280.320901
1023	0.000000	1023	7297.490901
1024	0.000000	1024	7663.610901
1025	0.000000	1025	7275.270901
1026	0.000000	1026	7310.620901
1027	0.000000	1027	8105.990901
1028	0.000000	1028	7537.360901
1029	0.000000	1029	7721.180901
1030	0.000000	1030	7741.380901
1031	0.000000	1031	7373.240901
1032	0.000000	1032	7700.980901
1033	0.000000	1033	7341.930901
1034	0.000000	1034	7234.870901
1035	0.000000	1035	7304.560901
1036	0.000000	1036	8123.160901
1037	0.000000	1037	7458.580901
1038	0.000000	1038	7720.170901
1039	0.000000	1039	7778.750901
1040	0.000000	1040	7341.930901
1041	0.000000	1041	7322.740901

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Coordenada x	Valor x	Coordenada z	Valor z
1042	0.000000	1042	7697.950901
1043	0.000000	1043	7330.820901
1044	0.000000	1044	7317.690901
1045	0.000000	1045	8164.570901
1046	0.000000	1046	7595.940901
1047	0.000000	1047	7716.130901
1048	0.000000	1048	7754.510901
1049	0.000000	1049	7433.840901
1050	0.000000	1050	7278.300901
1051	0.000000	1051	7732.290901
1052	0.000000	1052	7391.420901
1053	0.000000	1053	7999.940901
1054	0.000000	1054	7656.540901
1055	0.000000	1055	7872.680901
1056	0.000000	1056	7952.470901
1057	0.000000	1057	7500.500901
1058	0.000000	1058	7876.720901
1059	0.000000	1059	7255.070901
1060	0.000000	1060	7239.920901
1061	-0.000000	1061	0.000000
1062	0.000000	1062	195.430000
1063	0.000000	1063	7387.380901
1064	-0.000000	1064	0.000000
1065	0.000000	1065	163.110000
1066	0.000000	1066	117.660000
1067	0.000000	1067	887.780000
1068	0.000000	1068	376.720000
1069	0.000000	1069	607.000000
1070	0.000000	1070	676.690000
1071	0.000000	1071	540.340000
1072	0.000000	1072	7506.560901
1073	0.000000	1073	8366.570901
1074	0.000000	1074	7761.580901
1075	0.000000	1075	7837.330901
1076	0.000000	1076	7704.010901
1077	0.000000	1077	7603.520901
1078	0.000000	1078	7226.790901
1079	0.000000	1079	7831.270901
1080	0.000000	1080	7330.820901
1081	0.000000	1081	7424.750901
1082	0.000000	1082	8208.000901
1083	0.000000	1083	7717.140901
1084	0.000000	1084	7718.150901
1085	0.000000	1085	7673.710901
1086	0.000000	1086	7533.830901
1087	0.000000	1087	7187.400901
1088	0.000000	1088	7721.180901
1089	-0.000000	1089	0.000000
1090	0.000000	1090	117.660000

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Coordenada x	Valor x	Coordenada z	Valor z
1091	-0.000000	1091	0.000000
1092	0.000000	1092	280.270000
1093	0.000000	1093	7440.910901
1094	0.000000	1094	8250.420901
1095	0.000000	1095	7714.110901
1096	0.000000	1096	7767.640901
1097	0.000000	1097	7539.380901
1098	0.000000	1098	7570.190901
1099	0.000000	1099	7148.010901
1100	0.000000	1100	7680.780901
1101	0.000000	1101	7352.030901
1102	0.000000	1102	8227.190901
1103	0.000000	1103	7673.710901
1104	0.000000	1104	7667.650901
1105	0.000000	1105	7678.760901
1106	0.000000	1106	7540.900901
1107	0.000000	1107	7185.380901
1108	0.000000	1108	7681.790901
1109	0.000000	1109	7407.580901
1110	0.000000	1110	8279.710901
1111	0.000000	1111	7719.160901
1112	0.000000	1112	7736.330901
1113	0.000000	1113	7654.520901
1114	0.000000	1114	7567.160901
1115	0.000000	1115	7168.210901
1116	0.000000	1116	7726.230901
1117	-0.000000	1117	0.000000
1118	0.000000	1118	259.060000
1119	0.000000	1119	367.130000
1120	0.000000	1120	1277.640000
1121	0.000000	1121	680.730000
1122	0.000000	1122	782.740000
1123	0.000000	1123	598.920000
1124	0.000000	1124	583.270000
1125	0.000000	1125	698.910000
1126	0.000000	1126	8034.280901
1127	0.000000	1127	7985.800901
1128	0.000000	1128	7958.530901
1129	0.000000	1129	8128.210901
1130	0.000000	1130	7947.420901
1131	0.000000	1131	7588.370901
1132	0.000000	1132	7962.570901
1133	0.000000	1133	7947.420901
1134	0.000000	1134	8104.980901
1135	0.000000	1135	7635.840901
1136	0.000000	1136	7790.370901
1137	0.000000	1137	7962.570901
1138	0.000000	1138	8272.640901
1139	0.000000	1139	7537.870901

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Coordenada x	Valor x	Coordenada z	Valor z
1140	0.000000	1140	8092.860901
1141	0.000000	1141	7774.710901
1142	0.000000	1142	7882.780901
1143	0.000000	1143	8087.810901
1144	0.000000	1144	7548.980901
1145	0.000000	1145	7933.280901
1146	0.000000	1146	7936.310901
1147	0.000000	1147	8283.750901
1148	0.000000	1148	8129.220901
1149	0.000000	1149	7583.320901
1150	0.000000	1150	7998.930901
1151	0.000000	1151	7898.940901
1152	0.000000	1152	7826.220901
1153	0.000000	1153	8083.770901
1154	0.000000	1154	7747.440901
1155	0.000000	1155	7912.580901
1156	0.000000	1156	8170.630901
1157	0.000000	1157	8224.160901
1158	0.000000	1158	8113.060901
1159	0.000000	1159	8405.960901
1160	0.000000	1160	8197.900901
1161	0.000000	1161	7995.900901
1162	0.000000	1162	7798.950901
1163	0.000000	1163	7731.790901
1164	0.000000	1164	8056.500901
1165	0.000000	1165	8094.880901
1166	0.000000	1166	8134.270901
1167	0.000000	1167	8676.640901
1168	0.000000	1168	8215.070901
1169	-0.000000	1169	0.000000
1170	0.000000	1170	926.670000
1171	0.000000	1171	385.310000
1172	0.000000	1172	158.060000
1173	0.000000	1173	545.900000
1174	0.000000	1174	168.670000
1175	0.000000	1175	7918.130901
1176	0.000000	1176	132.450000
1177	0.000000	1177	630.000000
1178	0.000000	1178	397.758752
1179	0.000000	1179	962.850000
1180	0.000000	1180	423.300000
1181	0.000000	1181	465.858752
1182	0.000000	1182	1217.700000
1183	0.000000	1183	1487.550000
1184	0.000000	1184	1421.958752
1185	0.000000	1185	2152.050000
1186	0.000000	1186	1196.700000
1187	0.000000	1187	1447.158752
1188	0.000000	1188	118.350000

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Coordenada x	Valor x	Coordenada z	Valor z
1189	0.000000	1189	60.600000
1190	0.000000	1190	296.208752
1191	0.000000	1191	676.500000
1192	-0.000000	1192	0.000000
1193	0.000000	1193	286.758752
1194	0.000000	1194	310.541248
1195	0.000000	1195	417.791248
1196	0.000000	1196	788.291248
1197	0.000000	1197	1043.591248
1198	0.000000	1198	565.091248
1199	0.000000	1199	271.050000
1200	0.000000	1200	29.700000
1201	-0.000000	1201	0.000000
1202	0.000000	1202	416.700000
1203	0.000000	1203	31.008752
1204	0.000000	1204	259.500000
1205	0.000000	1205	541.650000
1206	0.000000	1206	183.258752
1207	0.543284	1207	0.000000
1208	2.580600	1208	0.000000
1209	0.000000	1209	11.550000
1210	0.000000	1210	533.850000
1211	0.000000	1211	283.458752
1212	0.000000	1212	837.000000
1213	0.000000	1213	309.000000
1214	0.000000	1214	754.500000
1215	0.000000	1215	373.008752
1216	2.037310	1216	0.000000
1217	0.000000	1217	75.900000
1218	0.000000	1218	487.650000
1219	0.000000	1219	275.208752
1220	0.000000	1220	685.200000
1221	0.000000	1221	302.400000
1222	0.000000	1222	351.558752
1223	0.814925	1223	0.000000
1224	0.000000	1224	582.450000
1225	2.852240	1225	0.000000
1226	0.000000	1226	934.800000
1227	0.000000	1227	743.808752
1228	0.000000	1228	1303.950000
1229	0.000000	1229	683.550000
1230	0.000000	1230	830.058752
1231	1.086570	1231	0.000000
1232	1.222390	1232	0.000000
1233	1.358210	1233	0.000000
1234	0.000000	1234	213.300000
1235	0.000000	1235	673.200000
1236	5.704480	1236	0.000000
1237	0.000000	1237	923.250000

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Coordenada x	Valor x	Coordenada z	Valor z
1238	0.000000	1238	935.208752
1239	0.000000	1239	1323.750000
1240	0.000000	1240	620.850000
1241	0.000000	1241	940.608752
1242	0.000000	1242	234.300000
1243	3.123880	1243	0.000000
1244	0.000000	1244	712.050000
1245	0.000000	1245	423.708752
1246	0.000000	1246	993.750000
1247	0.000000	1247	327.150000
1248	0.000000	1248	463.758752
1249	0.000000	1249	52.691248
1250	1.494030	1250	0.000000
1251	1.358210	1251	0.000000
1252	0.000000	1252	170.291248
1253	0.000000	1253	459.041248
1254	0.000000	1254	648.041248
1255	1.222390	1255	0.000000
1256	0.000000	1256	598.091248
1257	0.000000	1257	467.741248
1258	0.000000	1258	76.350000
1259	0.000000	1259	175.241248
1260	0.000000	1260	528.341248
1261	0.000000	1261	690.941248
1262	1.358210	1262	0.000000
1263	0.000000	1263	810.941248
1264	0.000000	1264	196.800000
1265	0.000000	1265	493.350000
1266	6.247760	1266	0.000000
1267	0.000000	1267	928.200000
1268	0.000000	1268	332.958752
1269	0.000000	1269	1229.700000
1270	0.000000	1270	508.308752
1271	0.950746	1271	0.000000
1272	1.086570	1272	0.000000
1273	0.000000	1273	7489.266437
1274	2.716420	1274	0.000000
1275	0.407463	1275	0.000000
1276	1.901490	1276	0.000000
1277	2.173130	1277	0.000000
1278	0.000000	1278	261.150000
1279	1.765670	1279	0.000000
1280	1.222390	1280	0.000000
1281	1.494030	1281	0.000000
1282	1.629850	1282	0.000000
1283	0.000000	1283	589.050000
1284	3.395520	1284	0.000000
1285	0.000000	1285	1035.450000
1286	0.000000	1286	486.408752

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Coordenada x	Valor x	Coordenada z	Valor z
1287	0.000000	1287	1310.550000
1288	0.000000	1288	556.158752
1289	0.000000	1289	312.191248
1290	0.000000	1290	320.441248
1291	0.000000	1291	869.141248
1292	2.037310	1292	0.000000
1293	0.000000	1293	896.741248
1294	0.000000	1294	261.150000
1295	0.814925	1295	0.000000
1296	0.407463	1296	0.000000
1297	0.000000	1297	23.100000
1298	3.395520	1298	0.000000
1299	0.000000	1299	495.900000
1300	0.000000	1300	349.458752
1301	0.000000	1301	665.400000
1302	0.000000	1302	328.800000
1303	0.000000	1303	439.008752
1304	0.000000	1304	257.400000
1305	2.580600	1305	0.000000
1306	0.000000	1306	553.650000
1307	0.000000	1307	517.758752
1308	0.000000	1308	985.500000
1309	0.000000	1309	234.750000
1310	0.000000	1310	795.750000
1311	0.000000	1311	575.958752
1312	1.086570	1312	0.000000
1313	0.000000	1313	84.150000
1314	2.988060	1314	0.000000
1315	0.000000	1315	345.750000
1316	0.000000	1316	278.508752
1317	0.000000	1317	670.350000
1318	0.000000	1318	165.450000
1319	0.000000	1319	415.908752
1320	1.494030	1320	0.000000
1321	0.679104	1321	0.000000
1322	0.000000	1322	46.200000
1323	4.074630	1323	0.000000
1324	0.000000	1324	189.000000
1325	0.000000	1325	248.808752
1326	0.000000	1326	703.350000
1327	0.000000	1327	86.250000
1328	0.000000	1328	587.850000
1329	0.000000	1329	382.908752
1330	0.814925	1330	0.000000
1331	2.077045	1331	0.000000
1332	1.182655	1332	0.000000
1333	0.000000	1333	345.750000
1334	0.000000	1334	174.558752
1335	0.000000	1335	596.100000

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Coordenada x	Valor x	Coordenada z	Valor z
1336	0.000000	1336	168.750000
1337	0.000000	1337	447.600000
1338	0.000000	1338	371.358752
1339	0.000000	1339	389.400000
1340	4.346270	1340	0.000000
1341	0.000000	1341	713.700000
1342	0.000000	1342	699.258752
1343	0.000000	1343	1188.450000
1344	0.000000	1344	546.600000
1345	0.000000	1345	876.258752
1346	2.037310	1346	0.000000
1347	1.901490	1347	0.000000
1348	0.543284	1348	0.000000
1349	0.000000	1349	201.750000
1350	1.901490	1350	0.000000
1351	0.407463	1351	0.000000
1352	0.000000	1352	148.950000
1353	0.000000	1353	125.400000
1354	4.753729	1354	0.000000
1355	0.000000	1355	439.800000
1356	0.000000	1356	448.458752
1357	0.000000	1357	921.150000
1358	0.000000	1358	509.958752
1359	1.222390	1359	0.000000
1360	0.000000	1360	21.450000
1361	0.000000	1361	307.800000
1362	0.000000	1362	64.008752
1363	0.000000	1363	205.050000
1364	0.000000	1364	137.400000
1365	0.000000	1365	54.900000
1366	0.000000	1366	224.508752
1367	0.950746	1367	0.000000
1368	0.000000	1368	103.950000
1369	3.259700	1369	0.000000
1370	0.000000	1370	472.800000
1371	0.000000	1371	106.908752
1372	0.000000	1372	393.150000
1373	0.000000	1373	261.150000
1374	0.000000	1374	228.150000
1375	0.000000	1375	282.258752
1376	0.950746	1376	0.000000
1377	0.000000	1377	74.700000
1378	1.494030	1378	0.000000
1379	0.000000	1379	340.350000
1380	0.000000	1380	61.050000
1381	3.667160	1381	0.000000
1382	0.000000	1382	398.550000
1383	0.000000	1383	118.458752
1384	0.000000	1384	104.400000

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Coordenada x	Valor x	Coordenada z	Valor z
1385	0.000000	1385	251.250000
1386	0.000000	1386	94.500000
1387	0.000000	1387	146.958752
1388	2.580600	1388	0.000000
1389	0.000000	1389	46.200000
1390	0.000000	1390	416.700000
1391	0.000000	1391	39.258752
1392	0.000000	1392	416.250000
1393	0.000000	1393	287.550000
1394	0.000000	1394	239.700000
1395	0.000000	1395	232.758752
1396	2.173130	1396	0.000000
1397	0.000000	1397	41.250000
1398	0.000000	1398	400.200000
1399	0.000000	1399	60.708752
1400	0.000000	1400	285.900000
1401	0.000000	1401	239.700000
1402	0.000000	1402	120.900000
1403	0.000000	1403	214.608752
1404	1.629850	1404	0.000000
1405	0.000000	1405	305.700000
1406	-0.000000	1406	0.000000
1407	0.000000	1407	103.950000
1408	0.000000	1408	403.500000
1409	0.000000	1409	202.608752
1410	0.000000	1410	261.150000
1411	0.000000	1411	332.100000
1412	0.000000	1412	236.058752
1413	1.358210	1413	0.000000
1414	0.679104	1414	0.000000
1415	1.358210	1415	0.000000
1416	0.407463	1416	0.000000
1417	0.679104	1417	0.000000
1418	4.210450	1418	0.000000
1419	0.000000	1419	502.500000
1420	0.000000	1420	110.208752
1421	0.000000	1421	726.450000
1422	0.000000	1422	56.550000
1423	0.000000	1423	841.950000
1424	0.000000	1424	305.358752
1425	0.679104	1425	0.000000
1426	0.000000	1426	476.850000
1427	0.950746	1427	0.000000
1428	0.000000	1428	754.950000
1429	0.000000	1429	563.958752
1430	0.000000	1430	1257.750000
1431	0.000000	1431	474.000000
1432	0.000000	1432	816.858752
1433	0.679104	1433	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1434	0.271642	1434	0.000000
1435	0.407463	1435	0.000000
1436	0.000000	1436	704.550000
1437	4.617910	1437	0.000000
1438	0.000000	1438	1111.350000
1439	0.000000	1439	625.008752
1440	0.000000	1440	1404.600000
1441	0.000000	1441	666.708752
1442	0.000000	1442	961.950000
1443	2.037310	1443	0.000000
1444	0.000000	1444	1362.150000
1445	0.000000	1445	813.108752
1446	0.000000	1446	1650.450000
1447	0.000000	1447	1122.108752
1448	0.407463	1448	0.000000
1449	0.543284	1449	0.000000
1450	0.000000	1450	853.050000
1451	1.222390	1451	0.000000
1452	0.000000	1452	1337.400000
1453	0.000000	1453	1034.208752
1454	0.000000	1454	2279.100000
1455	0.000000	1455	1336.608752
1456	0.000000	1456	218.141248
1457	0.000000	1457	348.491248
1458	0.000000	1458	738.791248
1459	1.494030	1459	0.000000
1460	0.000000	1460	992.441248
1461	0.000000	1461	472.691248
1462	1.629850	1462	0.000000
1463	0.000000	1463	940.230000
1464	0.000000	1464	413.790000
1465	1.904619	1465	0.000000
1466	0.000000	1466	464.220000
1467	0.000000	1467	373.200000
1468	0.000000	1468	70.620000
1469	0.000000	1469	164.100000
1470	0.000000	1470	289.560000
1471	1.182707	1471	0.000000
1472	0.000000	1472	587.220000
1473	0.000000	1473	186.240000
1474	0.000000	1474	38.640000
1475	0.000000	1475	183.780000
1476	0.000000	1476	962.370000
1477	-0.000000	1477	0.000000
1478	0.000000	1478	326.460000
1479	0.000000	1479	133.350000
1480	0.000000	1480	12.810000
1481	0.000000	1481	547.860000
1482	0.000000	1482	1449.450000

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Coordenada x	Valor x	Coordenada z	Valor z
1483	0.000000	1483	828.300000
1484	0.000000	1484	820.920000
1485	0.000000	1485	775.410000
1486	0.000000	1486	221.910000
1487	0.000000	1487	315.390000
1488	0.000000	1488	1114.890000
1489	0.000000	1489	528.180000
1490	1.259505	1490	0.000000
1491	0.000000	1491	524.490000
1492	0.000000	1492	551.550000
1493	0.000000	1493	133.350000
1494	0.153598	1494	0.000000
1495	0.000000	1495	105.060000
1496	0.000000	1496	935.310000
1497	0.000000	1497	427.320000
1498	0.122879	1498	0.000000
1499	0.000000	1499	455.610000
1500	0.000000	1500	373.200000
1501	0.000000	1501	522.030000
1502	0.000000	1502	86.610000
1503	0.000000	1503	111.210000
1504	0.000000	1504	989.430000
1505	0.000000	1505	399.030000
1506	0.291837	1506	0.000000
1507	0.000000	1507	348.600000
1508	0.000000	1508	374.430000
1509	0.000000	1509	76.770000
1510	0.184318	1510	0.000000
1511	0.000000	1511	196.080000
1512	0.000000	1512	583.530000
1513	0.000000	1513	383.040000
1514	0.307197	1514	0.000000
1515	0.000000	1515	460.530000
1516	0.000000	1516	309.240000
1517	0.000000	1517	84.150000
1518	0.291837	1518	0.000000
1519	0.061439	1519	0.000000
1520	0.445435	1520	0.000000
1521	0.000000	1521	196.800000
1522	0.000000	1522	121.050000
1523	0.000000	1523	440.850000
1524	0.000000	1524	231.750000
1525	0.368636	1525	0.000000
1526	0.000000	1526	332.610000
1527	0.000000	1527	119.820000
1528	0.000000	1528	23.880000
1529	0.000000	1529	175.170000
1530	0.000000	1530	822.150000
1531	0.000000	1531	455.610000

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Coordenada x	Valor x	Coordenada z	Valor z
1532	0.061439	1532	0.000000
1533	0.000000	1533	467.910000
1534	0.000000	1534	282.180000
1535	0.000000	1535	49.710000
1536	0.000000	1536	335.790000
1537	0.138238	1537	0.000000
1538	0.122879	1538	0.000000
1539	0.000000	1539	443.310000
1540	0.000000	1540	1480.200000
1541	0.000000	1541	723.750000
1542	0.307197	1542	0.000000
1543	0.000000	1543	488.820000
1544	0.000000	1544	702.840000
1545	0.000000	1545	76.770000
1546	0.000000	1546	447.000000
1547	0.000000	1547	1531.860000
1548	0.000000	1548	755.730000
1549	0.215038	1549	0.000000
1550	0.000000	1550	647.490000
1551	0.000000	1551	166.560000
1552	0.000000	1552	435.930000
1553	0.000000	1553	889.800000
1554	0.000000	1554	684.390000
1555	0.522234	1555	0.000000
1556	0.000000	1556	711.450000
1557	0.000000	1557	150.570000
1558	0.153598	1558	0.000000
1559	0.383996	1559	0.000000
1560	0.000000	1560	6729.545190
1561	0.383996	1561	0.000000
1562	0.046080	1562	0.000000
1563	0.061439	1563	0.000000
1564	0.000000	1564	78.720000
1565	0.368636	1565	0.000000
1566	0.122879	1566	0.000000
1567	0.061439	1567	0.000000
1568	0.076799	1568	0.000000
1569	0.153598	1569	0.000000
1570	0.000000	1570	392.880000
1571	0.000000	1571	775.410000
1572	0.000000	1572	649.950000
1573	0.353276	1573	0.000000
1574	0.000000	1574	657.330000
1575	0.000000	1575	71.850000
1576	0.000000	1576	549.090000
1577	0.000000	1577	1376.880000
1578	0.000000	1578	888.570000
1579	0.245757	1579	0.000000
1580	0.000000	1580	711.450000

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Coordenada x	Valor x	Coordenada z	Valor z
1581	0.000000	1581	214.530000
1582	0.046080	1582	0.000000
1583	0.030720	1583	0.000000
1584	0.000000	1584	73.080000
1585	0.000000	1585	877.500000
1586	0.000000	1586	349.830000
1587	0.583673	1587	0.000000
1588	0.000000	1588	278.490000
1589	0.000000	1589	338.760000
1590	0.000000	1590	86.610000
1591	0.000000	1591	122.280000
1592	0.000000	1592	752.040000
1593	0.000000	1593	267.420000
1594	0.368636	1594	0.000000
1595	0.000000	1595	391.650000
1596	0.000000	1596	143.190000
1597	0.000000	1597	378.120000
1598	0.000000	1598	63.240000
1599	0.076799	1599	0.000000
1600	0.000000	1600	171.480000
1601	0.000000	1601	930.390000
1602	0.000000	1602	290.790000
1603	0.122879	1603	0.000000
1604	0.000000	1604	335.070000
1605	0.000000	1605	269.880000
1606	0.000000	1606	122.280000
1607	0.076799	1607	0.000000
1608	0.076799	1608	0.000000
1609	0.000000	1609	165.330000
1610	0.000000	1610	952.530000
1611	0.000000	1611	196.080000
1612	0.215038	1612	0.000000
1613	0.000000	1613	381.810000
1614	0.000000	1614	232.980000
1615	0.000000	1615	423.630000
1616	0.000000	1616	119.820000
1617	0.046080	1617	0.000000
1618	0.000000	1618	186.240000
1619	0.000000	1619	1007.880000
1620	0.000000	1620	368.280000
1621	0.491514	1621	0.000000
1622	0.000000	1622	357.210000
1623	0.000000	1623	349.830000
1624	0.000000	1624	374.430000
1625	0.000000	1625	166.560000
1626	0.000000	1626	85.380000
1627	0.000000	1627	616.740000
1628	0.000000	1628	251.430000
1629	0.261117	1629	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1630	0.000000	1630	407.640000
1631	0.000000	1631	240.360000
1632	0.000000	1632	151.800000
1633	0.184318	1633	0.000000
1634	0.184318	1634	0.000000
1635	0.000000	1635	123.000000
1636	0.138238	1636	0.000000
1637	0.107519	1637	0.000000
1638	0.000000	1638	162.360000
1639	0.184318	1639	0.000000
1640	0.000000	1640	75.540000
1641	0.000000	1641	803.700000
1642	0.000000	1642	234.210000
1643	0.215038	1643	0.000000
1644	0.000000	1644	395.340000
1645	0.000000	1645	65.700000
1646	0.000000	1646	268.650000
1647	0.000000	1647	1106.280000
1648	0.000000	1648	422.400000
1649	0.568314	1649	0.000000
1650	0.000000	1650	148.110000
1651	0.000000	1651	408.870000
1652	0.000000	1652	164.100000
1653	0.000000	1653	139.500000
1654	0.061439	1654	0.000000
1655	0.000000	1655	314.160000
1656	0.000000	1656	1058.310000
1657	0.000000	1657	513.420000
1658	0.552954	1658	0.000000
1659	0.000000	1659	256.350000
1660	0.000000	1660	469.140000
1661	0.000000	1661	261.270000
1662	0.000000	1662	150.570000
1663	0.000000	1663	217.710000
1664	0.276477	1664	0.000000
1665	0.000000	1665	19.680000
1666	0.153598	1666	0.000000
1667	0.000000	1667	273.570000
1668	0.000000	1668	1049.700000
1669	0.000000	1669	449.460000
1670	0.552954	1670	0.000000
1671	0.000000	1671	32.490000
1672	0.000000	1672	453.150000
1673	0.000000	1673	153.030000
1674	0.000000	1674	41.100000
1675	0.000000	1675	287.100000
1676	0.000000	1676	1143.180000
1677	0.000000	1677	522.030000
1678	0.460795	1678	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1679	0.000000	1679	324.000000
1680	0.000000	1680	539.250000
1681	0.000000	1681	320.310000
1682	0.000000	1682	164.100000
1683	0.000000	1683	271.110000
1684	0.000000	1684	1123.500000
1685	0.000000	1685	493.740000
1686	0.460795	1686	0.000000
1687	0.000000	1687	210.840000
1688	0.000000	1688	487.590000
1689	0.000000	1689	215.760000
1690	0.000000	1690	134.580000
1691	0.000000	1691	45.510000
1692	0.138238	1692	0.000000
1693	0.000000	1693	165.330000
1694	0.000000	1694	1064.460000
1695	0.000000	1695	390.420000
1696	-0.000000	1696	0.000000
1697	0.000000	1697	86.610000
1698	0.000000	1698	450.690000
1699	0.000000	1699	44.790000
1700	0.107519	1700	0.000000
1701	0.076799	1701	0.000000
1702	0.061439	1702	0.000000
1703	0.061439	1703	0.000000
1704	0.061439	1704	0.000000
1705	0.000000	1705	234.210000
1706	0.000000	1706	533.100000
1707	0.414715	1707	0.000000
1708	0.000000	1708	502.350000
1709	0.000000	1709	314.160000
1710	0.000000	1710	716.370000
1711	0.000000	1711	165.330000
1712	0.107519	1712	0.000000
1713	0.000000	1713	251.430000
1714	0.000000	1714	717.600000
1715	0.000000	1715	383.040000
1716	0.076799	1716	0.000000
1717	0.000000	1717	560.160000
1718	0.000000	1718	287.100000
1719	0.000000	1719	208.380000
1720	0.030720	1720	0.000000
1721	0.000000	1721	6141.605190
1722	0.076799	1722	0.000000
1723	0.000000	1723	375.660000
1724	0.000000	1724	672.090000
1725	0.000000	1725	603.210000
1726	0.138238	1726	0.000000
1727	0.000000	1727	624.120000

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Coordenada x	Valor x	Coordenada z	Valor z
1728	0.000000	1728	50.940000
1729	0.000000	1729	427.320000
1730	0.000000	1730	531.870000
1731	0.000000	1731	649.950000
1732	0.291837	1732	0.000000
1733	0.000000	1733	667.170000
1734	0.000000	1734	250.200000
1735	0.046080	1735	0.000000
1736	0.046080	1736	0.000000
1737	0.000000	1737	181.320000
1738	0.000000	1738	367.050000
1739	0.000000	1739	466.680000
1740	0.061439	1740	0.000000
1741	0.000000	1741	970.980000
1742	0.000000	1742	245.280000
1743	0.000000	1743	478.980000
1744	0.000000	1744	1397.790000
1745	0.000000	1745	791.400000
1746	0.138238	1746	0.000000
1747	0.000000	1747	782.790000
1748	0.000000	1748	706.530000
1749	0.168958	1749	0.000000
1750	4.135220	1750	0.000000
1751	0.000000	1751	381.630000
1752	0.000000	1752	529.260000
1753	0.000000	1753	575.040000
1754	0.000000	1754	218.610000
1755	0.000000	1755	476.940000
1756	0.000000	1756	996.390000
1757	0.000000	1757	1113.630000
1758	0.000000	1758	1371.350000
1759	0.000000	1759	1526.130000
1760	0.000000	1760	895.020000
1761	0.000000	1761	1290.690000
1762	0.000000	1762	165.680000
1763	0.000000	1763	13.560000
1764	0.000000	1764	523.200000
1765	0.000000	1765	446.900000
1766	-0.000000	1766	0.000000
1767	0.000000	1767	419.650000
1768	0.000000	1768	43.120000
1769	1.666667	1769	0.000000
1770	0.000000	1770	297.700000
1771	0.000000	1771	439.880000
1772	0.000000	1772	123.780000
1773	0.000000	1773	159.750000
1774	0.000000	1774	133.590000
1775	0.424528	1775	0.000000
1776	0.000000	1776	328.220000

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Coordenada x	Valor x	Coordenada z	Valor z
1777	0.000000	1777	374.480000
1778	0.000000	1778	197.900000
1779	0.000000	1779	452.960000
1780	0.000000	1780	377.750000
1781	0.125786	1781	0.000000
1782	0.000000	1782	106.340000
1783	0.330189	1783	0.000000
1784	0.000000	1784	397.980000
1785	0.000000	1785	533.620000
1786	0.000000	1786	571.770000
1787	0.000000	1787	222.970000
1788	0.000000	1788	585.940000
1789	0.000000	1789	495.470000
1790	0.000000	1790	63.830000
1791	0.188679	1791	0.000000
1792	0.000000	1792	324.950000
1793	0.000000	1793	485.660000
1794	0.000000	1794	428.980000
1795	0.000000	1795	176.100000
1796	0.000000	1796	438.790000
1797	0.125786	1797	0.000000
1798	0.000000	1798	498.740000
1799	0.235849	1799	0.000000
1800	0.000000	1800	670.480000
1801	0.000000	1801	845.360000
1802	0.000000	1802	887.870000
1803	0.000000	1803	478.030000
1804	0.000000	1804	805.030000
1805	0.235849	1805	0.000000
1806	0.141509	1806	0.000000
1807	0.204403	1807	0.000000
1808	0.000000	1808	53.410000
1809	0.000000	1809	558.690000
1810	0.471698	1810	0.000000
1811	0.000000	1811	662.850000
1812	0.000000	1812	971.800000
1813	0.000000	1813	900.950000
1814	0.000000	1814	436.610000
1815	0.000000	1815	878.060000
1816	0.000000	1816	268.750000
1817	0.172956	1817	0.000000
1818	0.000000	1818	523.330000
1819	0.000000	1819	633.900000
1820	0.000000	1820	682.950000
1821	0.000000	1821	242.590000
1822	0.000000	1822	563.050000
1823	0.204403	1823	0.000000
1824	0.000000	1824	107.910000
1825	0.235849	1825	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
1826	0.393082	1826	0.000000
1827	0.000000	1827	76.780000
1828	0.000000	1828	254.580000
1829	0.000000	1829	127.530000
1830	0.000000	1830	195.110000
1831	0.000000	1831	109.000000
1832	0.000000	1832	80.660000
1833	0.408805	1833	0.000000
1834	0.000000	1834	119.290000
1835	0.000000	1835	279.650000
1836	0.000000	1836	124.260000
1837	0.000000	1837	332.450000
1838	0.000000	1838	156.960000
1839	0.000000	1839	439.880000
1840	0.361635	1840	0.000000
1841	0.000000	1841	666.120000
1842	0.000000	1842	573.950000
1843	0.000000	1843	838.820000
1844	0.000000	1844	592.480000
1845	0.188679	1845	0.000000
1846	0.220126	1846	0.000000
1847	0.000000	1847	6593.941291
1848	0.078616	1848	0.000000
1849	0.078616	1849	0.000000
1850	0.094340	1850	0.000000
1851	0.267296	1851	0.000000
1852	0.000000	1852	85.020000
1853	0.157233	1853	0.000000
1854	0.393082	1854	0.000000
1855	0.220126	1855	0.000000
1856	0.188679	1856	0.000000
1857	0.000000	1857	503.100000
1858	0.204403	1858	0.000000
1859	0.000000	1859	736.970000
1860	0.000000	1860	675.320000
1861	0.000000	1861	892.230000
1862	0.000000	1862	624.090000
1863	0.000000	1863	108.520000
1864	0.172956	1864	0.000000
1865	0.000000	1865	415.420000
1866	0.000000	1866	142.310000
1867	0.000000	1867	407.180000
1868	0.000000	1868	217.520000
1869	0.157233	1869	0.000000
1870	0.094340	1870	0.000000
1871	0.000000	1871	129.230000
1872	0.408805	1872	0.000000
1873	0.000000	1873	380.540000
1874	0.000000	1874	584.850000

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Coordenada x	Valor x	Coordenada z	Valor z
1875	0.000000	1875	466.040000
1876	0.000000	1876	243.680000
1877	0.000000	1877	546.700000
1878	0.000000	1878	284.010000
1879	0.707547	1879	0.000000
1880	0.000000	1880	418.690000
1881	0.000000	1881	696.030000
1882	0.000000	1882	677.500000
1883	0.000000	1883	181.550000
1884	0.000000	1884	620.820000
1885	0.000000	1885	637.170000
1886	0.141509	1886	0.000000
1887	0.000000	1887	169.560000
1888	0.110063	1888	0.000000
1889	0.000000	1889	281.350000
1890	0.000000	1890	537.980000
1891	0.000000	1891	469.310000
1892	0.000000	1892	135.770000
1893	0.000000	1893	531.440000
1894	0.157233	1894	0.000000
1895	0.125786	1895	0.000000
1896	0.000000	1896	144.490000
1897	0.283019	1897	0.000000
1898	0.000000	1898	177.800000
1899	0.000000	1899	518.360000
1900	0.000000	1900	491.110000
1901	0.000000	1901	83.450000
1902	0.000000	1902	483.480000
1903	0.000000	1903	509.640000
1904	0.235849	1904	0.000000
1905	0.000000	1905	113.970000
1906	0.471698	1906	0.000000
1907	0.000000	1907	281.350000
1908	0.000000	1908	469.310000
1909	0.000000	1909	420.260000
1910	0.000000	1910	137.950000
1911	0.000000	1911	390.830000
1912	0.000000	1912	502.010000
1913	0.000000	1913	371.210000
1914	0.220126	1914	0.000000
1915	0.000000	1915	524.420000
1916	0.000000	1916	815.930000
1917	0.000000	1917	811.570000
1918	0.000000	1918	387.560000
1919	0.000000	1919	835.550000
1920	0.125786	1920	0.000000
1921	0.141509	1921	0.000000
1922	0.188679	1922	0.000000
1923	0.000000	1923	45.780000

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Coordenada x	Valor x	Coordenada z	Valor z
1924	0.235849	1924	0.000000
1925	0.251572	1925	0.000000
1926	0.000000	1926	10.900000
1927	0.000000	1927	196.810000
1928	0.676101	1928	0.000000
1929	0.000000	1929	343.480000
1930	0.000000	1930	650.250000
1931	0.000000	1931	634.990000
1932	0.000000	1932	593.570000
1933	0.000000	1933	99.800000
1934	0.707547	1934	0.000000
1935	0.000000	1935	242.110000
1936	0.000000	1936	382.110000
1937	0.000000	1937	147.760000
1938	0.000000	1938	103.070000
1939	0.000000	1939	117.240000
1940	0.000000	1940	390.830000
1941	0.172956	1941	0.000000
1942	0.000000	1942	182.640000
1943	0.314465	1943	0.000000
1944	0.000000	1944	365.280000
1945	0.000000	1945	424.620000
1946	0.000000	1946	286.190000
1947	0.000000	1947	198.990000
1948	0.000000	1948	245.860000
1949	0.000000	1949	443.150000
1950	0.000000	1950	38.150000
1951	0.424528	1951	0.000000
1952	0.204403	1952	0.000000
1953	0.000000	1953	137.340000
1954	0.000000	1954	154.300000
1955	0.896226	1955	0.000000
1956	0.000000	1956	316.230000
1957	0.000000	1957	432.250000
1958	0.000000	1958	95.440000
1959	0.000000	1959	192.450000
1960	0.000000	1960	157.570000
1961	0.000000	1961	353.770000
1962	0.000000	1962	83.450000
1963	0.220126	1963	0.000000
1964	0.000000	1964	297.700000
1965	0.000000	1965	349.410000
1966	0.000000	1966	270.930000
1967	0.000000	1967	185.910000
1968	0.000000	1968	222.970000
1969	0.000000	1969	379.930000
1970	0.000000	1970	86.720000
1971	0.550314	1971	0.000000
1972	0.000000	1972	290.070000

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Coordenada x	Valor x	Coordenada z	Valor z
1973	0.000000	1973	366.850000
1974	0.000000	1974	188.090000
1975	0.000000	1975	157.570000
1976	0.000000	1976	147.760000
1977	0.000000	1977	371.210000
1978	0.220126	1978	0.000000
1979	0.000000	1979	114.450000
1980	0.000000	1980	45.300000
1981	-0.000000	1981	0.000000
1982	0.000000	1982	250.830000
1983	0.000000	1983	419.170000
1984	0.000000	1984	130.320000
1985	0.000000	1985	177.190000
1986	0.000000	1986	343.960000
1987	0.078616	1987	0.000000
1988	0.062893	1988	0.000000
1989	0.062893	1989	0.000000
1990	0.047170	1990	0.000000
1991	0.031447	1991	0.000000
1992	0.000000	1992	50.140000
1993	0.000000	1993	321.070000
1994	0.000000	1994	362.970000
1995	0.000000	1995	442.540000
1996	0.094340	1996	0.000000
1997	0.000000	1997	587.510000
1998	0.000000	1998	394.580000
1999	0.062893	1999	0.000000
2000	0.000000	2000	428.980000
2001	0.094340	2001	0.000000
2002	0.000000	2002	551.670000
2003	0.000000	2003	726.550000
2004	0.000000	2004	857.350000
2005	0.000000	2005	339.600000
2006	0.000000	2006	796.310000
2007	0.015723	2007	0.000000
2008	0.000000	2008	5230.831291
2009	0.047170	2009	0.000000
2010	0.000000	2010	579.400000
2011	0.078616	2011	0.000000
2012	0.000000	2012	787.110000
2013	0.000000	2013	766.880000
2014	0.000000	2014	954.360000
2015	0.000000	2015	697.120000
2016	0.000000	2016	749.440000
2017	0.141509	2017	0.000000
2018	0.000000	2018	952.790000
2019	0.000000	2019	891.140000
2020	0.000000	2020	1116.770000
2021	0.000000	2021	997.960000

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Coordenada x	Valor x	Coordenada z	Valor z
2022	0.031447	2022	0.000000
2023	0.047170	2023	0.000000
2024	0.000000	2024	677.500000
2025	0.078616	2025	0.000000
2026	0.000000	2026	936.440000
2027	0.000000	2027	1037.200000
2028	0.000000	2028	1532.060000
2029	0.000000	2029	1139.660000
2030	0.000000	2030	27.860000
2031	-0.000000	2031	0.000000
2032	0.000000	2032	310.780000
2033	0.000000	2033	123.780000
2034	0.000000	2034	451.870000
2035	0.000000	2035	108.520000
2036	0.157233	2036	0.000000
2037	0.000000	2037	1536.830000
2038	0.000000	2038	722.000000
2039	0.000000	2039	435.390000
2040	0.000000	2040	1080.110000
2041	0.000000	2041	485.560000
2042	0.000000	2042	347.160000
2043	-0.000000	2043	0.000000
2044	0.000000	2044	324.670000
2045	0.000000	2045	212.790000
2046	0.000000	2046	1030.510000
2047	-0.000000	2047	0.000000
2048	0.000000	2048	79.580000
2049	0.000000	2049	102.070000
2050	0.000000	2050	1419.760000
2051	0.000000	2051	287.180000
2052	0.000000	2052	738.140000
2053	-0.000000	2053	0.000000
2054	0.000000	2054	117.640000
2055	0.000000	2055	428.470000
2056	0.000000	2056	1919.160000
2057	0.000000	2057	971.120000
2058	0.000000	2058	1247.920000
2059	0.000000	2059	717.380000
2060	0.000000	2060	226.060000
2061	-0.000000	2061	0.000000
2062	0.000000	2062	1347.100000
2063	0.000000	2063	447.500000
2064	-0.000000	2064	0.000000
2065	0.000000	2065	262.960000
2066	-0.000000	2066	0.000000
2067	-0.000000	2067	0.000000
2068	0.000000	2068	7414.985711
2069	0.000000	2069	7107.045711
2070	0.000000	2070	8497.395711

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Coordenada x	Valor x	Coordenada z	Valor z
2071	0.000000	2071	7708.515711
2072	0.000000	2072	7402.875711
2073	0.000000	2073	8035.485711
2074	0.000000	2074	7453.045711
2075	0.000000	2075	7361.355711
2076	0.000000	2076	7337.135711
2077	0.000000	2077	7184.895711
2078	0.000000	2078	8642.715711
2079	0.000000	2079	7737.925711
2080	0.000000	2080	7472.075711
2081	0.000000	2081	7954.175711
2082	0.000000	2082	7523.975711
2083	0.000000	2083	7392.495711
2084	0.000000	2084	7309.455711
2085	0.000000	2085	7498.025711
2086	0.000000	2086	8265.575711
2087	0.000000	2087	7909.195711
2088	0.000000	2088	7665.835711
2089	0.000000	2089	8305.365711
2090	0.000000	2090	7626.045711
2091	0.000000	2091	7596.635711
2092	0.000000	2092	7254.095711
2093	0.000000	2093	7222.955711
2094	-0.000000	2094	0.000000
2095	0.000000	2095	245.660000
2096	0.000000	2096	7594.905711
2097	0.000000	2097	8267.305711
2098	0.000000	2098	7898.815711
2099	0.000000	2099	7868.245711
2100	0.000000	2100	8327.855711
2101	0.000000	2101	7562.035711
2102	0.000000	2102	7714.275711
2103	0.000000	2103	7344.055711
2104	0.000000	2104	8476.635711
2105	0.000000	2105	7886.705711
2106	0.000000	2106	7541.275711
2107	0.000000	2107	8191.185711
2108	0.000000	2108	7463.425711
2109	0.000000	2109	7423.635711
2110	0.000000	2110	216.250000
2111	-0.000000	2111	0.000000
2112	0.000000	2112	7311.185711
2113	0.000000	2113	7499.755711
2114	0.000000	2114	9180.745711
2115	0.000000	2115	8042.405711
2116	0.000000	2116	7319.835711
2117	0.000000	2117	7999.155711
2118	0.000000	2118	7833.645711
2119	0.000000	2119	7240.255711

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Coordenada x	Valor x	Coordenada z	Valor z
2120	0.000000	2120	7425.365711
2121	0.000000	2121	9173.825711
2122	0.000000	2122	8007.805711
2123	0.000000	2123	7240.255711
2124	0.000000	2124	8142.745711
2125	0.000000	2125	7286.965711
2126	0.000000	2126	7767.905711
2127	0.000000	2127	8628.875711
2128	0.000000	2128	8265.575711
2129	0.000000	2129	7598.365711
2130	0.000000	2130	8590.815711
2131	0.000000	2131	7622.585711
2132	0.000000	2132	7432.285711
2133	0.000000	2133	7333.675711
2134	0.000000	2134	9554.995711
2135	0.000000	2135	8730.945711
2136	0.000000	2136	7511.865711
2137	0.000000	2137	7700.435711
2138	-0.000000	2138	0.000000
2139	0.000000	2139	324.670000
2140	0.000000	2140	7389.035711
2141	0.000000	2141	7570.685711
2142	0.000000	2142	7262.745711
2143	0.000000	2143	7316.375711
2144	0.000000	2144	7923.605711
2145	0.000000	2145	8684.235711
2146	0.000000	2146	8433.385711
2147	0.000000	2147	7814.615711
2148	0.000000	2148	8730.945711
2149	0.000000	2149	7728.115711
2150	0.000000	2150	7738.495711
2151	0.000000	2151	9125.385711
2152	0.000000	2152	8364.185711
2153	0.000000	2153	7409.795711
2154	0.000000	2154	8402.245711
2155	0.000000	2155	7523.975711
2156	0.000000	2156	7255.825711
2157	0.000000	2157	7427.095711
2158	0.000000	2158	7229.875711
2159	0.000000	2159	8583.895711
2160	0.000000	2160	7767.335711
2161	0.000000	2161	7570.685711
2162	0.000000	2162	7954.175711
2163	0.000000	2163	7572.415711
2164	0.000000	2164	7504.945711
2165	0.000000	2165	7305.995711
2166	0.000000	2166	8414.355711
2167	0.000000	2167	7658.345711
2168	0.000000	2168	7577.605711

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Coordenada x	Valor x	Coordenada z	Valor z
2169	0.000000	2169	8120.255711
2170	0.000000	2170	7304.265711
2171	0.000000	2171	7333.675711
2172	0.000000	2172	7478.995711
2173	0.000000	2173	7295.615711
2174	0.000000	2174	7356.165711
2175	0.000000	2175	8646.175711
2176	0.000000	2176	7672.185711
2177	0.000000	2177	7558.575711
2178	0.000000	2178	8021.645711
2179	0.000000	2179	7463.425711
2180	0.000000	2180	7543.005711
2181	0.000000	2181	7409.795711
2182	0.000000	2182	7226.415711
2183	0.000000	2183	7345.785711
2184	0.000000	2184	8675.585711
2185	0.000000	2185	7537.245711
2186	0.000000	2186	7556.845711
2187	0.000000	2187	8085.655711
2188	0.000000	2188	7409.795711
2189	0.000000	2189	7376.925711
2190	0.000000	2190	7537.815711
2191	0.000000	2191	7390.765711
2192	0.000000	2192	7368.275711
2193	0.000000	2193	8746.515711
2194	0.000000	2194	7772.525711
2195	0.000000	2195	7549.925711
2196	0.000000	2196	8044.135711
2197	0.000000	2197	7567.225711
2198	0.000000	2198	7300.805711
2199	0.000000	2199	7596.635711
2200	0.000000	2200	7494.565711
2201	0.000000	2201	8464.525711
2202	0.000000	2202	7876.325711
2203	0.000000	2203	7818.075711
2204	0.000000	2204	8383.215711
2205	0.000000	2205	7681.405711
2206	0.000000	2206	7844.025711
2207	0.000000	2207	7261.015711
2208	0.000000	2208	7235.065711
2209	-0.000000	2209	0.000000
2210	0.000000	2210	262.390000
2211	0.000000	2211	7487.645711
2212	-0.000000	2212	0.000000
2213	0.000000	2213	207.030000
2214	0.000000	2214	129.180000
2215	0.000000	2215	1375.940000
2216	0.000000	2216	500.560000
2217	0.000000	2217	466.530000

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Coordenada x	Valor x	Coordenada z	Valor z
2218	0.000000	2218	1014.370000
2219	0.000000	2219	371.380000
2220	0.000000	2220	7691.785711
2221	0.000000	2221	9092.515711
2222	0.000000	2222	8056.245711
2223	0.000000	2223	7757.525711
2224	0.000000	2224	7957.635711
2225	0.000000	2225	7857.865711
2226	0.000000	2226	7212.575711
2227	0.000000	2227	7766.175711
2228	0.000000	2228	7390.765711
2229	0.000000	2229	7551.655711
2230	0.000000	2230	8820.905711
2231	0.000000	2231	7980.125711
2232	0.000000	2232	7553.385711
2233	0.000000	2233	7905.735711
2234	0.000000	2234	7738.495711
2235	0.000000	2235	7145.105711
2236	0.000000	2236	7577.605711
2237	-0.000000	2237	0.000000
2238	0.000000	2238	129.180000
2239	-0.000000	2239	0.000000
2240	0.000000	2240	407.710000
2241	0.000000	2241	7579.335711
2242	0.000000	2242	8893.565711
2243	0.000000	2243	7974.935711
2244	0.000000	2244	7638.155711
2245	0.000000	2245	7675.645711
2246	0.000000	2246	7800.775711
2247	0.000000	2247	7077.635711
2248	0.000000	2248	7508.405711
2249	0.000000	2249	7427.095711
2250	0.000000	2250	8853.775711
2251	0.000000	2251	7905.735711
2252	0.000000	2252	7466.885711
2253	0.000000	2253	7914.385711
2254	0.000000	2254	7750.605711
2255	0.000000	2255	7141.645711
2256	0.000000	2256	7510.135711
2257	0.000000	2257	7522.245711
2258	0.000000	2258	8943.735711
2259	0.000000	2259	7983.585711
2260	0.000000	2260	7584.525711
2261	0.000000	2261	7872.865711
2262	0.000000	2262	7795.585711
2263	0.000000	2263	7112.235711
2264	0.000000	2264	7586.255711
2265	-0.000000	2265	0.000000
2266	0.000000	2266	371.380000

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Coordenada x	Valor x	Coordenada z	Valor z
2267	0.000000	2267	556.490000
2268	0.000000	2268	2043.720000
2269	0.000000	2269	1021.290000
2270	0.000000	2270	767.550000
2271	0.000000	2271	881.160000
2272	0.000000	2272	926.710000
2273	0.000000	2273	642.990000
2274	0.000000	2274	8523.345711
2275	0.000000	2275	8440.305711
2276	0.000000	2276	8393.595711
2277	0.000000	2277	8684.235711
2278	0.000000	2278	8374.565711
2279	0.000000	2279	7831.915711
2280	0.000000	2280	8400.515711
2281	0.000000	2281	7946.095711
2282	0.000000	2282	8644.445711
2283	0.000000	2283	7913.225711
2284	0.000000	2284	8177.915711
2285	0.000000	2285	7991.075711
2286	0.000000	2286	8931.625711
2287	0.000000	2287	7745.415711
2288	0.000000	2288	8623.685711
2289	0.000000	2289	8078.735711
2290	0.000000	2290	7835.375711
2291	0.000000	2291	8615.035711
2292	0.000000	2292	7764.445711
2293	0.000000	2293	7940.905711
2294	0.000000	2294	8355.535711
2295	0.000000	2295	8950.655711
2296	0.000000	2296	8685.965711
2297	0.000000	2297	7823.265711
2298	0.000000	2298	8462.795711
2299	0.000000	2299	8291.525711
2300	0.000000	2300	7738.495711
2301	0.000000	2301	8608.115711
2302	0.000000	2302	7622.585711
2303	0.000000	2303	8387.245711
2304	0.000000	2304	8756.895711
2305	0.000000	2305	8848.585711
2306	0.000000	2306	8229.815711
2307	0.000000	2307	9159.985711
2308	0.000000	2308	8394.165711
2309	0.000000	2309	8457.605711
2310	0.000000	2310	7691.785711
2311	0.000000	2311	8077.575711
2312	0.000000	2312	8561.405711
2313	0.000000	2313	8627.145711
2314	0.000000	2314	8266.145711
2315	0.000000	2315	9623.625711

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Coordenada x	Valor x	Coordenada z	Valor z
2316	0.000000	2316	8423.575711
2317	0.000000	2317	409.440000
2318	0.000000	2318	1924.350000
2319	0.000000	2319	997.070000
2320	0.000000	2320	179.350000
2321	0.000000	2321	1272.140000
2322	0.000000	2322	698.350000
2323	0.000000	2323	8324.395711
2324	-0.000000	2324	0.000000
2325	0.000000	2325	78.000000
2326	-0.000000	2326	0.000000
2327	-0.000000	2327	0.000000
2328	-0.000000	2328	0.000000
2329	1.904619	2329	0.000000
2330	4.135220	2330	0.000000
2331	-0.000000	2331	0.000000
2332	2.633549	2332	0.000000
2333	0.000000	2333	78.000000
2334	0.000000	2334	78.000000
2335	-0.000000	2335	0.000000
2336	0.000000	2336	78.000000
2337	1.182707	2337	0.000000
2338	-0.000000	2338	0.000000
2339	-0.000000	2339	0.000000
2340	-0.000000	2340	0.000000
2341	-0.000000	2341	0.000000
2342	-0.000000	2342	0.000000
2343	-0.000000	2343	0.000000
2344	-0.000000	2344	0.000000
2345	-0.000000	2345	0.000000
2346	-0.000000	2346	0.000000
2347	-0.000000	2347	0.000000
2348	0.000000	2348	78.000000
2349	0.000000	2349	78.000000
2350	0.134728	2350	0.000000
2351	-0.000000	2351	0.000000
2352	0.000000	2352	78.000000
2353	0.000000	2353	78.000000
2354	1.666667	2354	0.000000
2355	-0.000000	2355	0.000000
2356	3.002244	2356	0.000000
2357	-0.000000	2357	0.000000
2358	-0.000000	2358	0.000000
2359	-0.000000	2359	0.000000
2360	-0.000000	2360	0.000000
2361	1.259505	2361	0.000000
2362	0.424528	2362	0.000000
2363	-0.000000	2363	0.000000
2364	2.317522	2364	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
2365	4.189334	2365	0.000000
2366	3.839746	2366	0.000000
2367	-0.000000	2367	0.000000
2368	4.617908	2368	0.000000
2369	0.215038	2369	0.000000
2370	0.676101	2370	0.000000
2371	-0.000000	2371	0.000000
2372	-0.000000	2372	0.000000
2373	-0.000000	2373	0.000000
2374	-0.000000	2374	0.000000
2375	-0.000000	2375	0.000000
2376	-0.000000	2376	0.000000
2377	-0.000000	2377	0.000000
2378	-0.000000	2378	0.000000
2379	-0.000000	2379	0.000000
2380	1.053420	2380	0.000000
2381	2.094670	2381	0.000000
2382	-0.000000	2382	0.000000
2383	-0.000000	2383	0.000000
2384	1.494030	2384	0.000000
2385	0.138238	2385	0.000000
2386	-0.000000	2386	0.000000
2387	-0.000000	2387	0.000000

### 3 Variáveis Duais (Multiplicadores de Lagrange)

Tabela 2: Variáveis duais do problema ship08s

Coordenada y	Valor y
1	-0.000000
2	-26494.003643
3	-0.000000
4	-0.000000
5	-0.000000
6	-0.000000
7	-0.000000
8	-0.000000
9	-0.000000
10	-0.000000
11	-0.000000
12	-0.000000
13	-0.000000
14	-9299.800141
15	-0.000000
16	-0.000000
17	-0.000000

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Coordenada y	Valor y
18	-0.000000
19	-0.000000
20	-0.000000
21	-0.000000
22	-0.000000
23	-0.000000
24	-0.000000
25	-0.000000
26	-0.000000
27	-78.000000
28	-78.000000
29	-78.000000
30	-0.000000
31	-78.000000
32	-78.000000
33	-78.000000
34	-78.000000
35	-0.000000
36	-0.000000
37	-78.000000
38	-0.000000
39	-78.000000
40	-78.000000
41	-78.000000
42	-78.000000
43	-78.000000
44	-0.000000
45	-78.000000
46	-78.000000
47	-78.000000
48	-78.000000
49	-78.000000
50	-78.000000
51	-101.500000
52	-101.500000
53	-101.500000
54	-101.500000
55	-101.500000
56	-101.500000
57	-101.500000
58	-101.500000
59	-78.000000
60	-0.000000
61	-78.000000
62	-0.000000
63	-78.000000
64	-78.000000
65	-78.000000
66	-78.000000
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Coordenada y	Valor y
67	-78.000000
68	-78.000000
69	-78.000000
70	-0.000000
71	-78.000000
72	-78.000000
73	-78.000000
74	-78.000000
75	-78.000000
76	-78.000000
77	-78.000000
78	-78.000000
79	-78.000000
80	-78.000000
81	-78.000000
82	-78.000000
83	-101.500000
84	-101.500000
85	-101.500000
86	-101.500000
87	-101.500000
88	-101.500000
89	-101.500000
90	-101.500000
91	5342.639314
92	5822.946437
93	5555.896437
94	5155.866437
95	5466.516437
96	5637.549314
97	5381.496437
98	5425.096437
99	5571.059314
100	5547.176437
101	5536.179314
102	5516.559314
103	-0.000000
104	5575.419314
105	5674.706437
106	5468.696437
107	5327.606437
108	5323.726437
109	5329.176437
110	5279.036437
111	5504.666437
112	5400.026437
113	5337.896437
114	6985.879314
115	6366.376437

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Coordenada y	Valor y
116	5450.166437
117	5876.966437
118	5655.696437
119	5372.776437
120	5487.226437
121	5541.629314
122	5326.996437
123	5640.916437
124	5385.856437
125	5288.846437
126	5704.746437
127	5487.226437
128	5491.586437
129	5562.339314
130	5479.596437
131	5693.846437
132	5518.739314
133	5478.506437
134	5681.856437
135	5474.146437
136	5643.096437
137	5540.539314
138	5524.189314
139	5710.196437
140	5683.329314
141	5678.586437
142	5506.846437
143	5604.946437
144	5622.289314
145	5476.326437
146	5692.756437
147	5705.129314
148	5529.736437
149	5421.826437
150	5495.946437
151	-0.000000
152	-0.000000
153	5710.196437
154	5522.106437
155	6235.576437
156	6183.256437
157	6153.826437
158	6336.946437
159	6141.836437
160	-0.000000
161	5723.756437
162	6492.816437
163	5653.996437
164	6129.846437

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Coordenada y	Valor y
165	6504.806437
166	6338.036437
167	5592.956437
168	5902.516437
169	6194.156437
170	5563.526437
171	-0.000000
172	5925.406437
173	5220.176437
174	6110.226437
175	-0.000000
176	-0.000000
177	5152.866437
178	4868.783915
179	5430.383915
180	5150.425190
181	5487.666437
182	5399.626437
183	5178.906437
184	5234.706437
185	5323.986437
186	5064.703915
187	5284.306437
188	5261.986437
189	-0.000000
190	5328.946437
191	5065.943915
192	5215.983915
193	5335.065190
194	5341.385190
195	5347.585190
196	5290.545190
197	5325.103915
198	5428.185190
199	5357.505190
200	6933.506437
201	5398.263915
202	5485.225190
203	5651.103915
204	5454.186437
205	5397.185190
206	5527.385190
207	5290.506437
208	5345.105190
209	5364.783915
210	5412.065190
211	5301.705190
212	5455.183915
213	5266.946437
Continua na próxima página	

Coordenada y	Valor y
214	5171.343915
215	5314.066437
216	5337.503915
217	5442.783915
218	5264.466437
219	5350.026437
220	5429.143915
221	5366.146437
222	5207.303915
223	5289.266437
224	5270.666437
225	5560.826437
226	5451.706437
227	5564.546437
228	5240.783915
229	5598.026437
230	5382.266437
231	5462.743915
232	5636.466437
233	5476.506437
234	5514.823915
235	5408.306437
236	5476.506437
237	-0.000000
238	-0.000000
239	5482.706437
240	5399.626437
241	5249.463915
242	5189.943915
243	5156.463915
244	5364.783915
245	5142.823915
246	-0.000000
247	5698.466437
248	5542.103915
249	5321.383915
250	5129.183915
251	5555.743915
252	5366.023915
253	5206.063915
254	5416.863915
255	5202.343915
256	5614.185190
257	-0.000000
258	5276.743915
259	5223.585190
260	5106.863915
261	-0.000000
262	-0.000000

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Coordenada y	Valor y
263	5258.866437
264	5515.426437
265	5640.666437
266	5552.626437
267	5671.666437
268	-0.000000
269	5362.906437
270	5418.706437
271	5507.986437
272	5643.146437
273	5468.306437
274	5445.986437
275	-0.000000
276	5512.946437
277	5712.586437
278	5532.786437
279	5524.106437
280	-0.000000
281	-0.000000
282	-0.000000
283	5836.586437
284	-0.000000
285	-0.000000
286	-0.000000
287	-0.000000
288	-0.000000
289	5886.066437
290	5638.186437
291	5877.386437
292	-0.000000
293	5474.506437
294	-0.000000
295	5948.186437
296	-0.000000
297	-0.000000
298	5690.146437
299	5450.946437
300	5505.506437
301	5498.066437
302	5541.466437
303	5677.746437
304	5448.466437
305	5534.026437
306	5664.106437
307	5550.146437
308	5640.666437
309	5473.266437
310	5454.666437
311	5744.826437

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Coordenada y	Valor y
312	-0.000000
313	5748.546437
314	5475.746437
315	-0.000000
316	5566.266437
317	5681.586437
318	5820.466437
319	5660.506437
320	5701.426437
321	-0.000000
322	-0.000000
323	-0.000000
324	-0.000000
325	5666.706437
326	5583.626437
327	5896.106437
328	5836.586437
329	5803.106437
330	6011.426437
331	5789.466437
332	-0.000000
333	5882.466437
334	6188.746437
335	5820.466437
336	5775.826437
337	6202.386437
338	6012.666437
339	5852.706437
340	6063.506437
341	5848.986437
342	-0.000000
343	-0.000000
344	5923.386437
345	5556.346437
346	5753.506437
347	-0.000000
348	-0.000000
349	7042.470901
350	7622.710901
351	7331.830901
352	7319.710901
353	7416.670901
354	-0.000000
355	-0.000000
356	-0.000000
357	-0.000000
358	-0.000000
359	-0.000000
360	-0.000000

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Coordenada y	Valor y
361	-0.000000
362	7287.390901
363	-0.000000
364	-0.000000
365	7296.480901
366	-0.000000
367	-0.000000
368	-0.000000
369	-0.000000
370	-0.000000
371	-0.000000
372	-0.000000
373	-0.000000
374	-0.000000
375	-0.000000
376	7389.400901
377	-0.000000
378	-0.000000
379	-0.000000
380	-0.000000
381	-0.000000
382	-0.000000
383	-0.000000
384	-0.000000
385	-0.000000
386	-0.000000
387	-0.000000
388	-0.000000
389	-0.000000
390	-0.000000
391	-0.000000
392	-0.000000
393	-0.000000
394	-0.000000
395	-0.000000
396	-0.000000
397	7476.260901
398	-0.000000
399	7479.290901
400	7139.430901
401	-0.000000
402	-0.000000
403	-0.000000
404	7537.870901
405	7407.580901
406	-0.000000
407	-0.000000
408	-0.000000
409	-0.000000

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Coordenada y	Valor y
410	-0.000000
411	7412.630901
412	6977.830901
413	-0.000000
414	-0.000000
415	-0.000000
416	-0.000000
417	-0.000000
418	-0.000000
419	-0.000000
420	-0.000000
421	-0.000000
422	-0.000000
423	-0.000000
424	-0.000000
425	-0.000000
426	-0.000000
427	-0.000000
428	-0.000000
429	-0.000000
430	-0.000000
431	7322.740901
432	-0.000000
433	-0.000000
434	-0.000000
435	5041.866437
436	4684.266437
437	5405.766437
438	5096.425190
439	5535.666437
440	5448.216437
441	5154.516437
442	5228.766437
443	5347.566437
444	4944.966437
445	5294.766437
446	5265.066437
447	-0.000000
448	5354.166437
449	4946.616437
450	5146.266437
451	5316.325190
452	5350.525190
453	5358.775190
454	5282.875190
455	5291.466437
456	5466.025190
457	5371.975190
458	-0.000000

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Coordenada y	Valor y
459	5388.816437
460	5541.925190
461	5699.466437
462	5520.816437
463	5424.775190
464	5598.025190
465	5303.016437
466	5355.475190
467	5344.266437
468	5444.575190
469	5297.725190
470	5438.766437
471	5248.566437
472	5086.866437
473	5334.366437
474	5307.966437
475	5422.266437
476	5268.366437
477	5336.016437
478	5404.116437
479	5403.666437
480	5134.716437
481	5301.366437
482	5276.616437
483	5662.716437
484	5517.516437
485	5667.666437
486	5179.266437
487	5712.216437
488	5425.116437
489	5474.616437
490	5763.366437
491	5550.516437
492	5543.916437
493	5459.766437
494	5550.516437
495	-0.000000
496	-0.000000
497	5558.766437
498	5448.216437
499	5190.816437
500	5111.616437
501	5067.066437
502	5344.266437
503	5048.916437
504	-0.000000
505	5845.866437
506	5580.216437
507	5286.516437

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Coordenada y	Valor y
508	5030.766437
509	5598.366437
510	5345.916437
511	5133.066437
512	5413.566437
513	5128.116437
514	5713.525190
515	-0.000000
516	5227.116437
517	5193.775190
518	5001.066437
519	-0.000000
520	-0.000000
521	4885.265190
522	5382.185190
523	5080.835190
524	4629.425190
525	4979.975190
526	5208.035190
527	4884.035190
528	4933.235190
529	5133.005190
530	5070.995190
531	5093.645190
532	5071.505190
533	-0.000000
534	5137.925190
535	5214.905190
536	4982.435190
537	4813.205190
538	4818.845190
539	4824.995190
540	4768.415190
541	5023.025190
542	4904.945190
543	4834.835190
544	-0.000000
545	5985.395190
546	4961.525190
547	5433.125190
548	5183.435190
549	4874.195190
550	5003.345190
551	5099.795190
552	4822.535190
553	5176.775190
554	4888.955190
555	4779.485190
556	5238.785190

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Coordenada y	Valor y
557	5003.345190
558	5008.265190
559	5123.165190
560	4994.735190
561	5226.485190
562	5073.965190
563	4993.505190
564	5212.955190
565	4988.585190
566	5179.235190
567	5098.565190
568	5080.115190
569	5244.935190
570	5259.695190
571	5209.265190
572	5025.485190
573	5136.185190
574	5190.815190
575	4991.045190
576	5225.255190
577	5264.615190
578	5051.315190
579	4929.545190
580	5013.185190
581	-0.000000
582	-0.000000
583	5244.935190
584	5042.705190
585	5837.795190
586	5778.755190
587	5745.545190
588	5952.185190
589	5732.015190
590	-0.000000
591	5270.255190
592	6128.075190
593	5191.535190
594	5718.485190
595	-0.000000
596	5953.415190
597	5122.655190
598	5471.975190
599	5791.055190
600	5089.445190
601	-0.000000
602	5497.805190
603	4701.995190
604	5696.345190
605	-0.000000

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Coordenada y	Valor y
606	-0.000000
607	4950.701291
608	4548.971291
609	5130.071291
610	5175.241291
611	5189.411291
612	5245.611291
613	4945.251291
614	5036.811291
615	5179.121291
616	4799.191291
617	5144.241291
618	5124.621291
619	-0.000000
620	5183.481291
621	4800.281291
622	4932.171291
623	5193.291291
624	5421.101291
625	5299.021291
626	5252.151291
627	5028.091291
628	5497.401291
629	5435.271291
630	-0.000000
631	5092.401291
632	5547.541291
633	5324.091291
634	5293.571291
635	5470.151291
636	5584.601291
637	5149.691291
638	5424.371291
639	5062.971291
640	5340.921291
641	5386.221291
642	5151.871291
643	4999.751291
644	4892.931291
645	5170.401291
646	5038.991291
647	5140.971291
648	5126.801291
649	5057.521291
650	5128.981291
651	5102.211291
652	4924.541291
653	5148.601291
654	5132.251291

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Coordenada y	Valor y
655	5387.311291
656	5291.391291
657	5390.581291
658	4953.971291
659	5320.211291
660	5230.351291
661	5149.081291
662	5415.651291
663	5313.191291
664	5194.861291
665	5169.791291
666	5226.471291
667	-0.000000
668	-0.000000
669	5318.641291
670	5200.311291
671	4961.601291
672	4909.281291
673	4879.851291
674	5062.971291
675	4867.861291
676	-0.000000
677	5458.161291
678	5218.841291
679	5024.821291
680	4855.871291
681	-0.000000
682	5064.061291
683	4923.451291
684	5108.751291
685	4920.181291
686	5660.901291
687	-0.000000
688	4985.581291
689	5193.771291
690	4836.251291
691	-0.000000
692	-0.000000
693	6969.215711
694	7890.735711
695	7392.495711
696	6943.265711
697	7537.815711
698	-0.000000
699	-0.000000
700	-0.000000
701	-0.000000
702	-0.000000
703	-0.000000

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Coordenada y	Valor y
704	-0.000000
705	-0.000000
706	7316.375711
707	-0.000000
708	-0.000000
709	7115.695711
710	-0.000000
711	-0.000000
712	-0.000000
713	-0.000000
714	-0.000000
715	-0.000000
716	-0.000000
717	-0.000000
718	-0.000000
719	-0.000000
720	7491.105711
721	-0.000000
722	-0.000000
723	-0.000000
724	-0.000000
725	-0.000000
726	-0.000000
727	-0.000000
728	-0.000000
729	-0.000000
730	-0.000000
731	-0.000000
732	-0.000000
733	-0.000000
734	-0.000000
735	-0.000000
736	-0.000000
737	-0.000000
738	-0.000000
739	-0.000000
740	-0.000000
741	7639.885711
742	-0.000000
743	7645.075711
744	7135.295711
745	-0.000000
746	-0.000000
747	-0.000000
748	7745.415711
749	7522.245711
750	-0.000000
751	-0.000000
752	-0.000000

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Coordenada y	Valor y
753	-0.000000
754	-0.000000
755	7530.895711
756	6858.495711
757	-0.000000
758	-0.000000
759	-0.000000
760	-0.000000
761	-0.000000
762	-0.000000
763	-0.000000
764	-0.000000
765	-0.000000
766	-0.000000
767	-0.000000
768	-0.000000
769	-0.000000
770	-0.000000
771	-0.000000
772	-0.000000
773	-0.000000
774	-0.000000
775	6967.485711
776	-0.000000
777	-0.000000
778	-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 ship08s.
- As variáveis duais representam os multiplicadores de Lagrange das restrições.
- Os custos reduzidos (z) indicam o impacto de forçar variáveis não-básicas na base.