Solução do Problema Sc205 - Solver HiGHS

Análise Computacional

17 de setembro de 2025

1 Informações do Problema

Informações do Problema:

- Nome: Sc205

- Número de Variáveis: 203

- Número de Restrições: 205

- Inviabilidade Primal: 0.000e+00

- Inviabilidade Dual: 0.000e+00

- Valor Primal: -5.220e+01

- Valor Dual: -5.220e+01

- Gap: -1.033e-17

- Número de Iterações: 12

2 Variáveis Primais e Custos Reduzidos

Tabela 1: Variáveis primais e custos reduzidos do problema Sc205

Coordenada x	Valor x	Coordenada z	Valor z
1	-0.000000	1	0.000000
2	10.848454	2	0.000000
3	52.202061	3	0.000000
4	52.202061	4	0.000000
5	52.202061	5	0.000000
6	-0.000000	6	0.000000
7	10.848454	7	0.000000
8	52.202061	8	0.000000
9	0.000000	9	0.149954
10	10.848454	10	0.000000
11	52.202061	11	0.000000
12	0.000000	12	0.095159
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Coordenada x	Valor x	Coordenada z	Valor z
13	12.357527	13	0.000000
14	57.422267	14	0.000000
15	57.422267	15	0.000000
16	109.624329	16	0.000000
17	-0.000000	17	0.000000
18	23.205981	18	0.000000
19	109.624329	19	0.000000
20	-0.000000	20	0.000000
21	23.205981	21	0.000000
22	109.624329	22	0.000000
23	0.000000	23	0.058629
24	14.229620	24	0.000000
25	63.164494	25	0.000000
26	63.164494	26	0.000000
27	172.788823	27	0.000000
28	-0.000000	28	0.000000
29	37.435600	29	0.000000
30	172.788823	30	0.000000
31	-0.000000	31	0.000000
32	37.435600	32	0.000000
33	172.788823	33	0.000000
34	0.000000	34	0.034275
35	16.607093	35	0.000000
36	69.480943	36	0.000000
37	69.480943	37	0.000000
38	242.269766	38	0.000000
39	-0.000000	39	0.000000
40	54.042693	40	0.000000
41	242.269766	41	0.000000
42	-0.000000	42	0.000000
43	54.042693	43	0.000000
44	242.269766	44	0.000000
45	0.000000	45	0.018040
46	19.699568	46	0.000000
47	76.429038	47	0.000000
48	76.429038	48	0.000000
49	318.698804	49	0.000000
50	-0.000000	50	0.000000
51	73.742261	51	0.000000
52	318.698804	52	0.000000
53	-0.000000	53	0.000000
54	73.742261	54	0.000000
55	318.698804	55	0.000000
56	0.000000	56	0.007216
57	23.817174	57	0.000000
58	84.071942	58	0.000000
59	84.071942	59	0.000000
60	402.770746	60	0.000000
61	-0.000000	61	0.000000

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Coordenada x	Valor x	Coordenada z	Valor z
62	97.559436	62	0.000000
63	402.770746	63	0.000000
64	-0.000000	64	0.000000
65	97.559436	65	0.000000
66	402.770746	66	0.000000
67	17.986534	67	0.000000
68	20.427099	68	0.000000
69	92.479136	69	0.000000
70	92.479136	70	0.000000
71	495.249881	71	0.000000
72	17.986534	72	0.000000
73	117.986534	73	0.000000
74	495.249881	74	0.000000
75	17.986534	75	0.000000
76	117.986534	76	0.000000
77	495.249881	77	0.000000
78	21.798653	78	0.000000
79	21.798653	79	0.000000
80	101.727049	80	0.000000
81	101.727049	81	0.000000
82	596.976931	82	0.000000
83	39.785188	83	0.000000
84	139.785188	84	0.000000
85	596.976931	85	0.000000
86	39.785188	86	0.000000
87	139.785188	87	0.000000
88	596.976931	88	0.000000
89	23.978519	89	0.000000
90	23.978519	90	0.000000
91	111.899754	91	0.000000
92	111.899754	92	0.000000
93	708.876685	93	0.000000
94	63.763706	94	0.000000
95	163.763706	95	0.000000
96	708.876685	96	0.000000
97	63.763706	97	0.000000
98	163.763706	98	0.000000
99	708.876685	99	0.000000
100	26.376371	100	0.000000
101	26.376371	101	0.000000
102	123.089730	102	0.000000
103	0.000000	103	0.000000
104	123.089730	104	0.000000
105	831.966415	105	0.000000
106	90.140077	106	0.000000
107	190.140077	107	0.000000
108	831.966415	108	0.000000
109	90.140077	109	0.000000
110	190.140077	110	0.000000

Coordenada x	Valor x	Coordenada z	Valor z
111	831.966415	111	0.000000
112	29.014008	112	0.000000
113	29.014008	113	0.000000
114	135.398703	114	0.000000
115	135.398703	115	0.000000
116	967.365117	116	0.000000
117	119.154085	117	0.000000
118	219.154085	118	0.000000
119	967.365117	119	0.000000
120	119.154085	120	0.000000
121	219.154085	121	0.000000
122	967.365117	122	0.000000
123	31.915408	123	0.000000
124	31.915408	124	0.000000
125	148.938573	125	0.000000
126	148.938573	126	0.000000
127	1116.303690	127	0.000000
128	151.069493	128	0.000000
129	251.069493	129	0.000000
130	1116.303690	130	0.000000
131	151.069493	131	0.000000
132	251.069493	132	0.000000
133	1116.303690	133	0.000000
134	35.106949	134	0.000000
135	35.106949	135	0.000000
136	163.832430	136	0.000000
137	163.832430	137	0.000000
138	1280.136120	138	0.000000
139	186.176443	139	0.000000
140	286.176443	140	0.000000
141	1280.136120	141	0.000000
142	186.176443	142	0.000000
143	286.176443	143	0.000000
144	1280.136120	144	0.000000
145	38.617644	145	0.000000
146	38.617644	146	0.000000
147	180.215673	147	0.000000
148	180.215673	148	0.000000
149	1460.351794	149	0.000000
150	224.794087	150	0.000000
151	324.794087	151	0.000000
152	1460.351794	152	0.000000
153	224.794087	153	0.000000
154	324.794087	154	0.000000
155	1460.351794	155	0.000000
156	42.479409	156	0.000000
157	42.479409	157	0.000000
158	198.237241	158	0.000000
159	198.237241	159	0.000000

Coordenada x	Valor x	Coordenada z	Valor z
160	1658.589034	160	0.000000
161	267.273496	161	0.000000
162	367.273496	162	0.000000
163	1658.589034	163	0.000000
164	267.273496	164	0.000000
165	367.273496	165	0.000000
166	1658.589034	166	0.000000
167	46.727350	167	0.000000
168	46.727350	168	0.000000
169	218.060965	169	0.000000
170	218.060965	170	0.000000
171	1876.649999	171	0.000000
172	314.000845	172	0.000000
173	414.000845	173	0.000000
174	1876.649999	174	0.000000
175	314.000845	175	0.000000
176	414.000845	176	0.000000
177	1876.649999	177	0.000000
178	51.400085	178	0.000000
179	51.400085	179	0.000000
180	239.867061	180	0.000000
181	239.867061	181	0.000000
182	2116.517060	182	0.000000
183	365.400930	183	0.000000
184	465.400930	184	0.000000
185	2116.517060	185	0.000000
186	365.400930	186	0.000000
187	465.400930	187	0.000000
188	2116.517060	188	0.000000
189	56.540093	189	0.000000
190	56.540093	190	0.000000
191	263.853767	191	0.000000
192	263.853767	192	0.000000
193	2380.370827	193	0.000000
194	421.941023	194	0.000000
195	521.941023	195	0.000000
196	2380.370827	196	0.000000
197	421.941023	197	0.000000
198	521.941023	198	0.000000
199	2380.370827	199	0.000000
200	62.194102	200	0.000000
201	62.194102	201	0.000000
202	290.239144	202	0.000000
203	290.239144	203	0.000000

3   Variáveis Duais (Multiplicadores de Lagrange)

Tabela 2: Variáveis duais do problema Sc205

Coordenada y	Valor y
1	-0.000000
2	-0.164386
3	-0.000000
4	-0.246579
5	-0.164386
6	-0.328772
7	-0.246579
8	-0.149954
9	-0.109591
10	-0.082193
11	-0.000000
12	-0.109591
13	-0.082193
14	-0.684929
15	-0.164386
16	-0.014432
17	-0.219181
18	-0.164386
19	-0.000000
20	-0.073060
21	-0.054795
22	-0.000000
23	-0.073060
24	-0.054795
25	-0.473221
26	-0.109591
27	-0.014432
28	-0.146121
29	-0.109591
30	-0.000000
31	-0.048707
32	-0.036530
33	-0.000000
34	-0.048707
35	-0.036530
36	-0.330573
37	-0.073060
38	-0.014432
39	-0.097414
40	-0.073060
41	-0.000000
42	-0.032471
43	-0.024353
44	-0.000000
45	-0.032471
46	-0.024353

Coordenada y	Valor y
47	-0.234102
48	-0.048707
49	-0.014432
50	-0.064943
51	-0.048707
52	-0.000000
53	-0.021648
54	-0.016236
55	-0.000000
56	-0.021648
57	-0.016236
58	-0.168541
59	-0.032471
60	-0.014432
61	-0.043295
62	-0.032471
63	-0.000000
64	-0.014432
65	-0.010824
66	-0.000000
67	-0.014432
68	-0.010824
69	-0.123700
70	-0.021648
71	-0.014432
72	-0.028863
73	-0.021648
74	-0.001804
75	-0.009020
76	-0.005412
77	-0.001804
78	-0.009020
79	-0.005412
80	-0.092775
81	-0.016236
82	-0.012628
83	-0.019844
84	-0.016236
85	-0.002255
86	-0.005863
87	-0.004059
88	-0.002255
89	-0.005863
90	-0.004059
91	-0.069581
92	-0.012177
93	-0.010373
94	-0.013981
95	-0.012177

Coordenada y	Valor y
96	-0.002142
97	-0.003946
98	-0.003044
99	-0.002142
100	-0.003946
101	-0.003044
102	-0.000000
103	-0.052186
104	-0.009133
105	-0.008231
106	-0.010035
107	-0.009133
108	-0.001832
109	-0.002734
110	-0.002283
111	-0.001832
112	-0.002734
113	-0.002283
114	-0.039139
115	-0.006849
116	-0.006398
117	-0.007300
118	-0.006849
119	-0.001487
120	-0.001938
121	-0.001712
122	-0.001487
123	-0.001938
124	-0.001712
125	-0.029355
126	-0.005137
127	-0.004912
128	-0.005363
129	-0.005137
130	-0.001172
131	-0.001397
132	-0.001284
133	-0.001172
134	-0.001397
135	-0.001284
136	-0.022016
137	-0.003853
138	-0.003740
139	-0.003966
140	-0.003853
141	-0.000907
142	-0.001020
143	-0.000963
144	-0.000907

Coordenada y	Valor y
145	-0.001020
146	-0.000963
147	-0.016512
148	-0.002890
149	-0.002833
150	-0.002946
151	-0.002890
152	-0.000694
153	-0.000751
154	-0.000722
155	-0.000694
156	-0.000751
157	-0.000722
158	-0.012384
159	-0.002167
160	-0.002139
161	-0.002195
162	-0.002167
163	-0.000528
164	-0.000556
165	-0.000542
166	-0.000528
167	-0.000556
168	-0.000542
169	-0.009288
170	-0.001625
171	-0.001611
172	-0.001639
173	-0.001625
174	-0.000399
175	-0.000413
176	-0.000406
177	-0.000399
178	-0.000413
179	-0.000406
180	-0.006966
181	-0.001219
182	-0.001212
183	-0.001226
184	-0.001219
185	-0.000301
186	-0.000308
187	-0.000305
188	-0.000301
189	-0.000308
190	-0.000305
191	-0.005224
192	-0.000914
193	-0.000911

Coordenada y	Valor y
194	-0.000918
195	-0.000914
196	-0.000911
197	-0.000918
198	-0.000914
199	-0.000911
200	-0.000918
201	-0.000914
202	-0.003918
203	-0.003914
204	-0.003922
205	-0.003918

4 Observações

- O solver HiGHS foi configurado com o método IPM (Interior Point Method).

- Este arquivo contém a solução detalhada para o problema Sc205.

- As variáveis duais representam os multiplicadores de Lagrange das restrições.

- Os custos reduzidos (z) indicam o impacto de forçar variáveis não-básicas na base.