



unknown

80	0	0	686.70326	0	922	-	686.70326	-	-	64s
81	0	0	686.80617	0	909	-	686.80617	-	-	65s
82	0	0	686.83571	0	911	-	686.83571	-	-	65s
83	0	0	686.90125	0	929	-	686.90125	-	-	66s
84	0	0	686.90125	0	894	-	686.90125	-	-	66s
85	0	0	686.96846	0	845	-	686.96846	-	-	67s
86	0	0	686.98925	0	824	-	686.98925	-	-	68s
87	0	0	686.98925	0	846	-	686.98925	-	-	68s
88	0	0	686.98925	0	830	-	686.98925	-	-	69s
89	0	0	688.85611	0	691	-	688.85611	-	-	78s
90	0	0	688.95813	0	707	-	688.95813	-	-	80s
91	0	0	688.98856	0	781	-	688.98856	-	-	80s
92	0	0	689.02914	0	1105	-	689.02914	-	-	81s
93	0	0	689.02914	0	1105	-	689.02914	-	-	81s
94	0	0	689.02914	0	1056	-	689.02914	-	-	82s
95	0	0	689.25075	0	1216	-	689.25075	-	-	86s
96	0	0	689.25075	0	1206	-	689.25075	-	-	86s
97	0	0	689.30412	0	1164	-	689.30412	-	-	87s
98	0	0	689.31664	0	1247	-	689.31664	-	-	87s
99	0	0	689.34971	0	1256	-	689.34971	-	-	88s
100	0	0	689.35577	0	1222	-	689.35577	-	-	88s
101	0	0	689.35577	0	1191	-	689.35577	-	-	89s
102	0	0	689.79891	0	1191	-	689.79891	-	-	93s
103	0	0	690.15897	0	1216	-	690.15897	-	-	95s
104	0	0	690.39414	0	1263	-	690.39414	-	-	96s
105	0	0	690.40537	0	1380	-	690.40537	-	-	97s
106	0	0	690.40537	0	1417	-	690.40537	-	-	97s
107	0	0	690.52718	0	1135	-	690.52718	-	-	102s
108	0	0	690.56216	0	1118	-	690.56216	-	-	103s
109	0	0	690.58002	0	1271	-	690.58002	-	-	104s
110	0	0	690.58002	0	1360	-	690.58002	-	-	105s
111	0	0	690.58592	0	1215	-	690.58592	-	-	109s
112	0	0	690.58592	0	1204	-	690.58592	-	-	109s
113	0	0	690.58592	0	1182	-	690.58592	-	-	110s
114	0	0	690.58592	0	1177	-	690.58592	-	-	111s
115	0	0	690.63114	0	1072	-	690.63114	-	-	114s
116	0	0	690.63114	0	1070	-	690.63114	-	-	114s
117	0	0	690.66792	0	1400	-	690.66792	-	-	115s
118	0	0	690.67237	0	1425	-	690.67237	-	-	116s
119	0	0	690.67237	0	1419	-	690.67237	-	-	116s
120	0	0	690.70668	0	1240	-	690.70668	-	-	118s
121	0	0	690.71722	0	1280	-	690.71722	-	-	119s
122	0	0	690.71722	0	1273	-	690.71722	-	-	119s
123	0	0	690.71722	0	1250	-	690.71722	-	-	120s
124	0	0	690.75330	0	1408	-	690.75330	-	-	124s
125	0	0	690.75495	0	1362	-	690.75495	-	-	125s
126	0	0	690.75495	0	1356	-	690.75495	-	-	125s
127	0	0	690.84309	0	1046	-	690.84309	-	-	129s
128	0	0	690.85670	0	1129	-	690.85670	-	-	130s
129	0	0	690.85670	0	1089	-	690.85670	-	-	130s
130	0	0	690.85670	0	1076	-	690.85670	-	-	131s
131	0	0	690.96660	0	1331	-	690.96660	-	-	133s
132	0	0	690.96660	0	1332	-	690.96660	-	-	133s
133	0	0	690.97926	0	1307	-	690.97926	-	-	134s
134	0	0	690.97926	0	1301	-	690.97926	-	-	134s
135	0	0	691.43178	0	1319	-	691.43178	-	-	138s
136	0	0	691.43178	0	1311	-	691.43178	-	-	138s
137	0	0	691.58054	0	1259	-	691.58054	-	-	139s
138	0	0	691.58054	0	1258	-	691.58054	-	-	140s
139	0	0	691.58671	0	1243	-	691.58671	-	-	140s
140	0	0	691.58671	0	1240	-	691.58671	-	-	141s
141	0	0	691.59015	0	1259	-	691.59015	-	-	141s
142	0	0	691.61060	0	1011	-	691.61060	-	-	144s
143	0	0	691.61060	0	964	-	691.61060	-	-	145s
144	0	0	691.71134	0	958	-	691.71134	-	-	148s
145	0	0	691.71134	0	954	-	691.71134	-	-	148s
146	0	0	691.71419	0	728	-	691.71419	-	-	149s
147	0	0	691.81619	0	871	-	691.81619	-	-	152s
148	0	0	691.81619	0	881	-	691.81619	-	-	152s
149	0	0	691.82142	0	862	-	691.82142	-	-	154s
150	0	0	691.83534	0	949	-	691.83534	-	-	157s
151	0	0	691.83544	0	951	-	691.83544	-	-	158s
152	0	0	691.87025	0	1051	-	691.87025	-	-	161s
153	0	0	691.87025	0	1004	-	691.87025	-	-	161s
154	0	0	691.87025	0	498	-	691.87025	-	-	165s
155	0	2	691.87025	0	494	-	691.87025	-	-	180s
156	33	38	infeasible	8		-	696.74588	-	345	186s
157	59	59	718.00000	12	228	-	696.74588	-	440	190s
158	91	78	718.00000	16	306	-	696.74588	-	560	195s
159	115	105	718.00000	25	188	-	696.74588	-	569	200s
160	*	123	105	24	698.0000000	696.74588	0.18%	551	200s	
161										
162										Cutting planes:
163										Learned: 642

```
164 Gomory: 30
165 Lift-and-project: 3
166 Cover: 509
167 Implied bound: 133
168 Clique: 83
169 MIR: 435
170 StrongCG: 84
171 Flow cover: 35
172 GUB cover: 99
173 Zero half: 16
174 RLT: 166
175 Relax-and-lift: 506
176 BQP: 9
177
178 Explored 154 nodes (142122 simplex iterations) in 200.43 seconds (168.70 work units)
179 Thread count was 8 (of 8 available processors)
180
181 Solution count 1: 698
182
183 Optimal solution found (tolerance 1.00e-04)
184 Best objective 6.980000000000e+02, best bound 6.980000000000e+02, gap 0.0000%
185 Optimal Obj: 698.0
186 Obj = 698.0
187 Solutions
188 Vessel i: 0: li: 5, pi: 16-21, ai-di: 3-22, taoi-deltai: 3-21, periodi: 18, taoPi_SP-deltaPi_SP: 3-8, periodPi: 5, betaNi: 10, bi: 18, Txijt:
90, o1i: 90, o2i: 100, o3i: -325, o4i: 200, Ti: 65
189 Vessel i: 1: li: 7, pi: 9-16, ai-di: 4-25, taoi-deltai: 4-24, periodi: 20, taoPi_SP-deltaPi_SP: 4-11, periodPi: 7, betaNi: 12, bi: 20, Txijt:
140, o1i: 140, o2i: 140, o3i: -351, o4i: 240, Ti: 169
190 Vessel i: 2: li: 6, pi: 21-27, ai-di: 18-26, taoi-deltai: 18-25, periodi: 7, taoPi_SP-deltaPi_SP: 18-21, periodPi: 3, betaNi: 4, bi: 7, Txijt:
: 42, o1i: 42, o2i: 60, o3i: -104, o4i: 80, Ti: 78
191 Vessel i: 3: li: 6, pi: 14-20, ai-di: 26-61, taoi-deltai: 26-60, periodi: 34, taoPi_SP-deltaPi_SP: 26-35, periodPi: 9, betaNi: 20, bi: 34,
Txijt: 204, o1i: 204, o2i: 180, o3i: -650, o4i: 400, Ti: 134
192 Vessel i: 4: li: 6, pi: 28-34, ai-di: 20-68, taoi-deltai: 20-47, periodi: 27, taoPi_SP-deltaPi_SP: 20-27, periodPi: 7, betaNi: 16, bi: 27,
Txijt: 162, o1i: 162, o2i: 140, o3i: -520, o4i: 320, Ti: 102
193 Vessel i: 5: li: 6, pi: 8-14, ai-di: 35-60, taoi-deltai: 35-44, periodi: 9, taoPi_SP-deltaPi_SP: 35-40, periodPi: 5, betaNi: 5, bi: 9, Txijt:
54, o1i: 54, o2i: 100, o3i: -104, o4i: 100, Ti: 150
194 TimeSolveModel: 248.000000
195
196
197
198 TimeAll: 253.000000
199
200
201
202
```