

- MARTE - Marte GAS
- MG001 - Modulo statico/flusso termico stazionario v. 1
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DATI GENERALI -----

Numero di nodi		184
Numero di rami		228
Numero di cabine di salto		0
Nome del gas		methane
Peso molecolare	(kg/kmole)	16.0420
Fattore di compressibilita'	(-)	0.9980
Viscosita' dinamica	(cP)	0.0109
Temperatura media di flusso	(°C)	11.0000
Pressione atmosf. a quota zero	(mBar Ass.)	1013.2500
Peso Molecolare dell'aria	(kg/kmole)	28.9700
Temperatura dell'aria	(°C)	11.0000
Precisione finale sulle portate	(Smc/h)	0.0023

TABELLA DEI MATERIALI -----

Nome	Tipo	Area (m2)	Diametro int.(mm)	Scabrez. (micron)	Spessore (mm)	Lunghezza (m)
PES5 110	Circolare	0.006	90.000	10.000	0.000	2116.32
PES5 125	Circolare	0.008	102.200	10.000	0.000	163.50
PES5 160	Circolare	0.013	130.800	10.000	0.000	74.00
PES5 75	Circolare	0.003	61.200	10.000	0.000	6352.09
PES5 90	Circolare	0.004	73.600	10.000	0.000	6368.20
Lunghezza totale (m)						15074.10

RIASSUNTO PER CONDOTTO -----

Gruppo	Lungh. gruppo
PES5 110	2116.3178
PES5 125	163.4984
PES5 160	74.0008
PES5 75	6352.0886
PES5 90	6368.1960
Lungh. totale:	15074.1016

DATI DEI NODI -----

Nodo	Quota s.l.m. (m)	Pressione (mBar)	Portata (Smc/h)
1	0.00	0.00	0.00
10	0.00	0.00	0.00
100	0.00	0.00	0.00
101	0.00	0.00	0.00
102	0.00	0.00	0.00
103	0.00	0.00	0.00
104	0.00	0.00	0.00

105	0.00	0.00	0.00
106	0.00	0.00	0.00
107	0.00	0.00	0.00
108	0.00	0.00	0.00
109	0.00	0.00	0.00
11	0.00	0.00	0.00
110	0.00	0.00	0.00
111	0.00	0.00	0.00
112	0.00	0.00	0.00
113	0.00	0.00	0.00
114	0.00	0.00	0.00
115	0.00	0.00	0.00
116	0.00	0.00	0.00
117	0.00	0.00	0.00
118	0.00	0.00	0.00
119	0.00	0.00	0.00
12	0.00	500.00	0.00
120	0.00	0.00	0.00
121	0.00	0.00	0.00
122	0.00	0.00	0.00
123	0.00	0.00	0.00
124	0.00	0.00	0.00
125	0.00	0.00	0.00
126	0.00	0.00	0.00
127	0.00	0.00	0.00
128	0.00	0.00	0.00
129	0.00	0.00	0.00
13	0.00	0.00	0.00
130	0.00	0.00	0.00
131	0.00	0.00	0.00
132	0.00	0.00	0.00
133	0.00	0.00	0.00
134	0.00	0.00	0.00
135	0.00	0.00	0.00
136	0.00	0.00	0.00
137	0.00	0.00	0.00
138	0.00	0.00	0.00
139	0.00	0.00	0.00
140	0.00	0.00	0.00
141	0.00	0.00	0.00
142	0.00	0.00	0.00
143	0.00	0.00	0.00
144	0.00	0.00	0.00
145	0.00	0.00	0.00
146	0.00	0.00	0.00
147	0.00	0.00	0.00
148	0.00	0.00	0.00
149	0.00	0.00	0.00
15	0.00	0.00	0.00
150	0.00	0.00	0.00
151	0.00	0.00	0.00
152	0.00	0.00	0.00
153	0.00	0.00	0.00
154	0.00	0.00	0.00
155	0.00	0.00	0.00
156	0.00	0.00	0.00
157	0.00	0.00	0.00
158	0.00	0.00	0.00
159	0.00	0.00	0.00
16	0.00	0.00	0.00
160	0.00	0.00	0.00
161	0.00	0.00	0.00
162	0.00	0.00	0.00

163	0.00	0.00	0.00
164	0.00	0.00	0.00
165	0.00	0.00	0.00
166	0.00	0.00	0.00
167	0.00	0.00	0.00
168	0.00	0.00	0.00
169	0.00	0.00	0.00
17	0.00	0.00	0.00
170	0.00	0.00	0.00
171	0.00	0.00	0.00
172	0.00	0.00	0.00
173	0.00	0.00	0.00
174	0.00	0.00	0.00
175	0.00	0.00	0.00
176	0.00	0.00	0.00
177	0.00	0.00	0.00
178	0.00	0.00	0.00
179	0.00	0.00	0.00
18	0.00	0.00	0.00
180	0.00	0.00	0.00
181	0.00	0.00	0.00
182	0.00	0.00	0.00
183	0.00	0.00	0.00
184	0.00	0.00	0.00
185	0.00	0.00	0.00
19	0.00	0.00	0.00
2	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
3	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
4	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
5	0.00	0.00	0.00
50	0.00	0.00	0.00
51	0.00	0.00	0.00
52	0.00	0.00	0.00

53	0.00	0.00	0.00
54	0.00	0.00	0.00
55	0.00	0.00	0.00
56	0.00	0.00	0.00
57	0.00	0.00	0.00
58	0.00	0.00	0.00
59	0.00	0.00	0.00
6	0.00	0.00	0.00
60	0.00	0.00	0.00
61	0.00	0.00	0.00
62	0.00	0.00	0.00
63	0.00	0.00	0.00
64	0.00	0.00	0.00
65	0.00	0.00	0.00
66	0.00	0.00	0.00
67	0.00	0.00	0.00
68	0.00	0.00	0.00
69	0.00	0.00	0.00
7	0.00	0.00	0.00
70	0.00	0.00	0.00
71	0.00	0.00	0.00
72	0.00	0.00	0.00
73	0.00	0.00	0.00
74	0.00	0.00	0.00
75	0.00	0.00	0.00
76	0.00	0.00	0.00
77	0.00	0.00	0.00
78	0.00	0.00	0.00
79	0.00	0.00	0.00
8	0.00	0.00	0.00
80	0.00	0.00	0.00
81	0.00	0.00	0.00
82	0.00	0.00	0.00
83	0.00	0.00	0.00
84	0.00	0.00	0.00
85	0.00	0.00	0.00
86	0.00	0.00	0.00
87	0.00	0.00	0.00
88	0.00	0.00	0.00
89	0.00	0.00	0.00
9	0.00	0.00	0.00
90	0.00	0.00	0.00
91	0.00	0.00	0.00
92	0.00	0.00	0.00
93	0.00	0.00	0.00
94	0.00	0.00	0.00
95	0.00	0.00	0.00
96	0.00	0.00	0.00
97	0.00	0.00	0.00
98	0.00	0.00	0.00
99	0.00	0.00	0.00

DATI DEI RAMI -----

Ramo	Nodo iniziale	Nodo finale	Materiale	Lunghezza (m)	Portata (Smc/h)
1	1	2	PES5 75	131.75	10.14
10	17	18	PES5 90	76.50	5.89
100	102	100	PES5 90	57.84	4.45
101	94	102	PES5 90	56.28	4.33
102	103	94	PES5 90	53.40	4.11
103	104	103	PES5 90	37.95	2.92

104	99	104	PES5 90	35.05	2.70
105	96	102	PES5 75	124.49	9.58
106	105	96	PES5 90	28.48	2.19
107	37	105	PES5 90	27.32	2.10
108	100	37	PES5 75	113.74	8.75
109	106	104	PES5 75	73.46	5.65
11	19	20	PES5 90	54.60	4.20
110	97	106	PES5 75	90.24	6.94
111	103	107	PES5 90	36.43	2.80
112	108	109	PES5 75	79.23	6.10
113	107	108	PES5 90	153.35	11.80
114	109	99	PES5 75	34.28	2.64
115	110	32	PES5 90	31.08	2.39
116	111	110	PES5 90	109.88	8.46
117	75	111	PES5 90	62.32	4.80
118	112	75	PES5 90	42.45	3.27
119	113	112	PES5 90	38.16	2.94
120	114	113	PES5 90	51.44	3.96
121	115	114	PES5 75	93.81	7.22
122	116	115	PES5 90	11.77	0.91
123	117	116	PES5 75	29.94	2.30
124	23	117	PES5 75	102.43	7.88
125	118	24	PES5 75	50.16	3.86
126	119	118	PES5 90	128.18	9.86
127	6	119	PES5 90	125.23	9.64
128	120	6	PES5 90	58.98	4.54
129	121	120	PES5 90	69.69	5.36
13	23	24	PES5 75	79.24	6.10
130	122	121	PES5 90	68.81	5.29
131	34	122	PES5 90	64.93	5.00
132	33	123	PES5 90	110.72	8.52
133	29	124	PES5 75	40.85	3.14
134	125	29	PES5 75	70.43	5.42
135	126	125	PES5 75	64.13	4.93
136	76	126	PES5 75	61.04	4.70
137	4	76	PES5 75	48.35	3.72
138	127	3	PES5 90	8.54	0.66
139	128	127	PES5 90	98.29	7.56
14	25	26	PES5 75	64.32	4.95
140	129	128	PES5 90	73.58	5.66
141	123	129	PES5 90	70.72	5.44
142	126	111	PES5 75	71.17	5.48
143	130	124	PES5 75	69.18	5.32
144	90	131	PES5 75	70.32	5.41
145	131	5	PES5 75	73.91	5.69
146	132	133	PES5 90	72.79	5.60
147	134	132	PES5 90	65.34	5.03
148	45	134	PES5 90	103.55	7.97
149	135	136	PES5 110	67.12	5.17
15	27	25	PES5 75	114.67	8.82
150	47	135	PES5 110	132.48	10.19
151	137	5	PES5 90	49.82	3.83
152	133	137	PES5 90	87.74	6.75
153	79	137	PES5 90	46.68	3.59
154	83	118	PES5 90	38.57	2.97
155	127	119	PES5 75	35.01	2.69
156	3	138	PES5 90	32.42	2.49
157	139	115	PES5 90	47.14	3.63
158	138	139	PES5 90	28.68	2.21
159	4	112	PES5 75	73.64	5.67
16	28	29	PES5 75	74.53	5.74
160	113	139	PES5 75	94.16	7.25
161	140	77	PES5 75	72.81	5.60

162	116	140	PES5 90	69.32	5.33
163	141	136	PES5 110	72.87	5.61
164	142	141	PES5 110	133.46	10.27
165	143	142	PES5 110	72.88	5.61
166	144	143	PES5 110	73.34	5.64
167	84	144	PES5 90	46.26	3.56
168	71	114	PES5 90	42.31	3.26
169	74	57	PES5 75	154.67	11.90
17	30	31	PES5 90	49.40	3.80
170	54	145	PES5 75	126.54	9.74
171	146	144	PES5 110	217.24	16.72
172	23	146	PES5 75	90.17	6.94
173	146	147	PES5 110	10.25	0.79
174	148	149	PES5 75	72.75	5.60
175	147	150	PES5 75	116.06	8.93
176	59	147	PES5 110	14.60	1.12
177	149	59	PES5 90	80.77	6.22
178	151	149	PES5 75	60.91	4.69
179	61	151	PES5 75	45.20	3.48
18	31	32	PES5 110	58.85	4.53
180	149	152	PES5 75	176.99	13.62
181	153	151	PES5 75	101.58	7.82
182	154	155	PES5 75	38.19	2.94
183	156	154	PES5 90	34.87	2.68
184	62	156	PES5 90	36.17	2.78
186	63	157	PES5 75	36.08	2.78
187	60	63	PES5 75	107.10	8.24
188	158	154	PES5 90	46.50	3.58
189	157	158	PES5 75	35.89	2.76
19	28	31	PES5 110	30.79	2.37
190	159	158	PES5 90	20.17	1.55
191	158	160	PES5 75	66.03	5.08
192	161	162	PES5 75	50.61	3.89
193	160	161	PES5 75	4.36	0.34
194	163	65	PES5 75	89.08	6.86
195	159	163	PES5 90	59.70	4.59
196	164	72	PES5 110	20.29	1.56
197	165	164	PES5 110	88.71	6.83
198	22	165	PES5 110	32.40	2.49
199	166	22	PES5 110	40.98	3.15
2	3	4	PES5 75	24.81	1.91
20	16	28	PES5 110	33.40	2.57
200	19	166	PES5 110	18.02	1.39
201	167	19	PES5 110	48.58	3.74
202	168	167	PES5 75	69.04	5.31
203	169	168	PES5 90	65.61	5.05
204	163	169	PES5 90	49.24	3.79
205	170	70	PES5 75	47.61	3.66
206	21	167	PES5 75	38.55	2.97
207	170	21	PES5 75	91.18	7.02
208	171	67	PES5 110	51.65	3.97
209	172	66	PES5 75	47.36	3.64
21	33	16	PES5 110	31.22	2.40
210	171	172	PES5 110	13.93	1.07
211	172	167	PES5 110	34.70	2.67
212	166	173	PES5 90	202.90	15.61
213	108	145	PES5 90	81.43	6.27
214	174	55	PES5 90	102.39	7.88
215	145	174	PES5 90	14.48	1.11
216	109	174	PES5 75	91.91	7.07
217	54	175	PES5 75	93.31	7.18
218	176	173	PES5 90	129.41	9.96
219	177	176	PES5 90	102.98	7.92

22	34	33	PES5 110	51.20	3.94
220	20	177	PES5 90	93.37	7.19
221	168	20	PES5 90	16.78	1.29
222	176	178	PES5 75	93.13	7.17
223	177	179	PES5 90	105.12	8.09
224	180	159	PES5 75	64.55	4.97
225	140	69	PES5 90	40.69	3.13
226	181	10	PES5 90	108.03	8.31
227	179	181	PES5 90	46.28	3.56
228	182	11	PES5 90	137.66	10.59
229	181	183	PES5 90	66.30	5.10
23	35	36	PES5 75	80.04	6.16
230	180	160	PES5 75	21.37	1.64
231	24	138	PES5 75	97.14	7.48
232	101	184	PES5 90	76.67	5.90
233	185	9	PES5 75	101.51	7.81
24	37	35	PES5 75	103.05	7.93
25	38	39	PES5 90	14.55	1.12
26	38	40	PES5 75	115.37	8.88
27	41	17	PES5 75	57.46	4.42
28	38	2	PES5 75	56.50	4.35
29	17	42	PES5 75	114.63	8.82
3	5	6	PES5 90	47.15	3.63
30	42	40	PES5 90	70.17	5.40
31	43	42	PES5 90	82.61	6.36
32	43	34	PES5 110	30.18	2.32
33	44	43	PES5 110	29.60	2.28
34	45	44	PES5 110	59.28	4.56
35	18	45	PES5 125	27.18	2.09
36	27	18	PES5 125	27.45	2.11
37	46	27	PES5 125	36.78	2.83
38	13	47	PES5 160	37.98	2.92
39	48	49	PES5 75	42.86	3.30
4	7	8	PES5 75	79.65	6.13
40	50	51	PES5 125	14.22	1.09
41	46	50	PES5 125	16.85	1.30
42	41	46	PES5 75	78.51	6.04
43	48	41	PES5 75	28.13	2.16
44	39	17	PES5 90	56.86	4.38
45	49	52	PES5 75	45.62	3.51
46	51	49	PES5 75	93.22	7.17
47	53	54	PES5 75	55.75	4.29
48	55	53	PES5 110	24.42	1.88
49	56	55	PES5 110	69.27	5.33
5	9	7	PES5 75	84.33	6.49
50	57	56	PES5 110	83.89	6.46
51	32	57	PES5 110	64.13	4.94
52	47	51	PES5 125	41.01	3.16
53	58	59	PES5 110	78.16	6.01
54	60	58	PES5 90	80.11	6.16
55	61	60	PES5 90	24.94	1.92
56	62	61	PES5 90	38.29	2.95
58	64	63	PES5 75	19.78	1.52
59	65	64	PES5 75	48.25	3.71
6	10	11	PES5 90	105.03	8.08
60	66	65	PES5 75	18.22	1.40
62	68	67	PES5 110	13.23	1.02
63	69	68	PES5 90	94.75	7.29
64	70	69	PES5 90	14.94	1.15
65	71	70	PES5 90	21.77	1.68
66	72	71	PES5 75	75.69	5.82
67	73	72	PES5 110	117.31	9.03
68	53	73	PES5 110	55.82	4.30

69	74	53	PES5 75	54.62	4.20
7	12	13	PES5 160	36.02	2.77
70	75	74	PES5 75	46.78	3.60
71	76	75	PES5 75	72.64	5.59
72	77	68	PES5 110	22.91	1.76
73	58	77	PES5 110	119.16	9.17
74	78	44	PES5 75	86.44	6.65
75	79	80	PES5 75	71.19	5.48
76	81	79	PES5 90	72.24	5.56
77	82	81	PES5 90	1.03	0.08
78	83	82	PES5 90	71.83	5.53
79	84	83	PES5 90	50.03	3.85
80	85	84	PES5 90	72.59	5.59
81	86	85	PES5 90	73.53	5.66
82	87	86	PES5 90	118.61	9.13
83	88	87	PES5 90	72.63	5.59
84	89	88	PES5 90	65.77	5.06
85	50	89	PES5 90	122.86	9.45
86	90	78	PES5 75	66.60	5.13
87	91	39	PES5 75	77.02	5.93
88	9	40	PES5 90	64.83	4.99
89	92	185	PES5 90	71.78	5.52
9	15	16	PES5 90	106.93	8.23
90	15	92	PES5 90	79.64	6.13
91	93	94	PES5 75	57.63	4.44
92	95	93	PES5 75	79.21	6.10
93	95	96	PES5 90	51.28	3.95
94	97	95	PES5 90	47.79	3.68
95	30	97	PES5 90	36.99	2.85
96	98	30	PES5 75	187.91	14.46
97	56	98	PES5 90	63.30	4.87
98	98	99	PES5 90	32.50	2.50
99	100	101	PES5 90	101.36	7.80

RISULTATI DEI NODI -----

Nodo	Pressione (mBar)	Portata entr. (Smc/h)
1	455.88	0.00
10	431.37	0.00
100	433.09	-0.00
101	433.03	-0.00
102	433.19	0.00
103	433.48	0.00
104	433.61	0.00
105	433.17	0.00
106	433.72	0.00
107	433.48	-0.00
108	433.56	0.00
109	433.63	0.00
11	431.25	0.00
110	435.67	0.00
111	435.67	-0.00
112	435.69	0.00
113	435.64	0.00
114	435.31	-0.00
115	435.96	0.00
116	435.91	-0.00
117	436.24	0.00
118	443.00	0.00
119	442.14	-0.00
12	500.00	1159.99

120	445.27	0.00
121	445.49	0.00
122	445.78	0.00
123	440.62	0.00
124	436.87	-0.00
125	436.36	0.00
126	436.02	0.00
127	438.65	-0.00
128	439.28	0.00
129	439.89	0.00
13	494.23	0.00
130	436.86	0.00
131	446.90	0.00
132	451.21	0.00
133	448.88	0.00
134	453.50	0.00
135	477.60	0.00
136	472.48	0.00
137	446.37	0.00
138	437.59	-0.00
139	436.64	0.00
140	434.99	0.00
141	467.09	0.00
142	457.68	0.00
143	452.79	0.00
144	448.04	0.00
145	433.64	0.00
146	437.69	-0.00
147	437.26	0.00
148	435.58	0.00
149	435.59	0.00
15	441.62	0.00
150	437.20	-0.00
151	434.78	0.00
152	435.42	0.00
153	434.74	-0.00
154	433.86	0.00
155	433.85	0.00
156	434.03	0.00
157	433.73	0.00
158	433.69	0.00
159	433.65	0.00
16	440.46	-0.00
160	433.63	-0.00
161	433.63	-0.00
162	433.63	0.00
163	433.59	-0.00
164	433.86	0.00
165	433.69	0.00
166	433.59	-0.00
167	433.77	0.00
168	433.46	0.00
169	433.52	0.00
17	458.56	0.00
170	434.38	0.00
171	434.04	0.00
172	433.93	0.00
173	432.75	0.00
174	433.65	-0.00
175	433.69	-0.00
176	432.54	-0.00
177	432.53	0.00
178	432.51	-0.00

179	431.86	0.00
18	460.16	0.00
180	433.63	0.00
181	431.64	0.00
182	431.22	-0.00
183	431.63	0.00
184	433.02	0.00
185	443.82	0.00
19	433.60	0.00
2	455.95	-0.00
20	433.40	-0.00
21	433.90	0.00
22	433.64	0.00
23	437.68	0.00
24	439.26	0.00
25	463.65	-0.00
26	463.64	0.00
27	463.80	0.00
28	438.09	0.00
29	436.90	0.00
3	438.08	0.00
30	434.75	0.00
31	436.53	0.00
32	435.67	-0.00
33	442.02	0.00
34	446.14	0.00
35	432.95	0.00
36	432.93	0.00
37	433.11	0.00
38	456.06	0.00
39	456.52	0.00
4	436.74	0.00
40	450.20	-0.00
41	466.15	-0.00
42	450.38	0.00
43	449.24	-0.00
44	451.40	0.00
45	457.52	0.00
46	468.93	0.00
47	488.15	0.00
48	467.51	0.00
49	469.70	0.00
5	446.00	-0.00
50	471.84	0.00
51	475.42	0.00
52	469.70	0.00
53	433.98	0.00
54	433.72	0.00
55	433.99	-0.00
56	434.17	0.00
57	434.90	0.00
58	435.32	0.00
59	436.69	0.00
6	445.14	0.00
60	434.51	0.00
61	434.47	-0.00
62	434.23	0.00
63	433.79	0.00
64	433.78	0.00
65	433.76	0.00
66	433.79	0.00
67	434.47	0.00
68	434.59	-0.00

69	434.76	0.00
7	448.28	-0.00
70	434.75	-0.00
71	434.79	0.00
72	433.90	0.00
73	433.94	0.00
74	434.79	0.00
75	435.62	-0.00
76	436.07	0.00
77	434.73	-0.00
78	449.31	0.00
79	446.03	0.00
8	448.26	0.00
80	446.02	0.00
81	445.70	0.00
82	445.70	0.00
83	445.46	-0.00
84	447.88	-0.00
85	450.39	0.00
86	453.18	0.00
87	458.23	0.00
88	461.65	0.00
89	464.99	0.00
9	448.39	0.00
90	448.01	0.00
91	456.50	0.00
92	442.69	0.00
93	433.37	0.00
94	433.33	0.00
95	433.50	0.00
96	433.24	0.00
97	434.01	0.00
98	433.91	-0.00
99	433.70	0.00

RISULTATI DEI RAMI -----

Ramo	Portate di ramo (Smc/h)			Pressione min. (mBar)	Velocita' max in modulo (m/s)
	Ingresso	Uscita	Distrib.		
1	0.00	-10.14	10.14	455.8783	0.6498
10	-76.21	-82.10	5.89	458.5592	3.6279
100	20.73	16.28	4.45	433.0896	0.9329
101	25.83	21.50	4.33	433.1879	1.1628
102	26.31	22.20	4.11	433.3338	1.1839
103	29.40	26.48	2.92	433.4781	1.3228
104	24.90	22.20	2.70	433.6089	1.1202
105	8.80	-0.78	9.58	433.1876	0.5730
106	-22.37	-24.56	2.19	433.1658	1.1055
107	-20.27	-22.37	2.10	433.1068	1.0069
108	2.58	-6.18	8.75	433.0870	0.4022
109	12.85	7.20	5.65	433.6089	0.8362
11	31.09	26.89	4.20	433.4017	1.3990
110	19.79	12.85	6.94	433.7152	1.2879
111	0.17	-2.64	2.80	433.4781	0.1186
112	-4.47	-10.56	6.10	433.5580	0.6876
113	-2.64	-14.44	11.80	433.4794	0.6496
114	-10.97	-13.61	2.64	433.6299	0.8858
115	-3.78	-6.17	2.39	435.6670	0.2774
116	4.67	-3.78	8.46	435.6643	0.2100
117	-8.68	-13.47	4.80	435.6242	0.6055
118	18.90	15.63	3.27	435.6242	0.8492

119	-13.56	-16.50	2.94	435.6428	0.7414
120	-38.09	-42.04	3.96	435.3111	1.8893
121	28.80	21.58	7.22	435.3111	1.8713
122	-31.66	-32.56	0.91	435.9103	1.4630
123	33.91	31.60	2.30	435.9103	2.2027
124	41.79	33.91	7.88	436.2365	2.7121
125	99.50	95.64	3.86	439.2624	6.4338
126	-36.17	-46.03	9.86	442.1408	2.0580
127	89.62	79.99	9.64	442.1408	4.0011
128	23.62	19.08	4.54	445.1439	1.0543
129	28.98	23.62	5.36	445.2709	1.2935
13	-43.30	-49.40	6.10	437.6769	3.2024
130	34.28	28.98	5.29	445.4860	1.5295
131	39.27	34.28	5.00	445.7782	1.7521
132	63.40	54.88	8.52	440.6163	2.8365
133	8.47	5.32	3.14	436.8687	0.5498
134	-23.97	-29.39	5.42	436.3619	1.9081
135	-19.03	-23.97	4.93	436.0249	1.5568
136	9.29	4.59	4.70	436.0249	0.6036
137	39.39	35.67	3.72	436.0726	2.5578
138	149.67	149.02	0.66	438.0844	6.7118
139	43.78	36.21	7.56	438.6468	1.9623
14	4.95	-0.00	4.95	463.6399	0.3156
140	49.44	43.78	5.66	439.2784	2.2151
141	54.88	49.44	5.44	439.8950	2.4577
142	23.63	18.15	5.48	435.6686	1.5350
143	0.00	-5.32	5.32	436.8575	0.3457
144	43.34	37.93	5.41	446.8993	2.7930
145	37.93	32.24	5.69	445.9960	2.4462
146	102.85	97.25	5.60	448.8805	4.5727
147	107.88	102.85	5.03	451.2090	4.7887
148	115.85	107.88	7.97	453.4969	5.1284
149	284.47	279.30	5.17	472.4778	8.3081
15	13.77	4.95	8.82	463.6493	0.8781
150	294.66	284.47	10.19	477.5984	8.5454
151	45.76	41.93	3.83	445.9960	2.0413
152	97.25	90.50	6.75	446.3693	4.3306
153	-41.14	-44.74	3.59	446.0321	1.9955
154	148.50	145.53	2.97	443.0037	6.6280
155	-113.46	-116.15	2.69	438.6468	7.5152
156	66.66	64.16	2.49	437.5915	2.9902
157	64.99	61.36	3.63	435.9618	2.9185
158	102.93	100.72	2.21	436.6368	4.6189
159	41.07	35.40	5.67	435.6881	2.6668
16	43.59	37.85	5.74	436.8997	2.8280
160	-28.48	-35.73	7.25	435.6428	2.3204
161	19.73	14.13	5.60	434.7327	1.2830
162	63.26	57.93	5.33	434.9873	2.8422
163	-273.70	-279.30	5.61	467.0896	8.1854
164	-263.43	-273.70	10.27	457.6781	8.0502
165	-257.82	-263.43	5.61	452.7856	7.7977
166	-252.18	-257.82	5.64	448.0363	7.6572
167	-26.04	-29.60	3.56	447.8794	1.3189
168	-56.41	-59.67	3.26	434.7889	2.6818
169	0.39	-11.51	11.90	434.7925	0.7486
17	-104.30	-108.10	3.80	434.7541	4.8545
170	10.77	1.04	9.74	433.6355	0.7011
171	-205.86	-222.58	16.72	437.6900	6.6319
172	1.51	-5.43	6.94	437.6760	0.3522
173	200.43	199.64	0.79	437.2568	6.0147
174	0.00	-5.60	5.60	435.5780	0.3638
175	8.93	0.00	8.93	437.2035	0.5798
176	-189.59	-190.71	1.12	436.6933	5.7248

177	-58.37	-64.58	6.22	435.5903	2.9000
178	-34.46	-39.15	4.69	434.7753	2.5444
179	-23.17	-26.65	3.48	434.4691	1.7327
18	112.06	107.53	4.53	435.6727	3.3655
180	13.62	-0.00	13.62	435.4250	0.8852
181	-0.00	-7.82	7.82	434.7379	0.5083
182	2.94	-0.00	2.94	433.8522	0.1912
183	35.41	32.72	2.68	433.8556	1.5928
184	38.19	35.41	2.78	434.0252	1.7178
186	12.45	9.67	2.78	433.7318	0.8102
187	28.83	20.59	8.24	433.7924	1.8751
188	-26.21	-29.78	3.58	433.6947	1.3401
189	9.67	6.91	2.76	433.6947	0.6295
19	222.53	220.16	2.37	436.5283	6.6759
190	-21.31	-22.86	1.55	433.6484	1.0288
191	10.25	5.17	5.08	433.6330	0.6673
192	3.89	-0.00	3.89	433.6257	0.2534
193	4.23	3.89	0.34	433.6317	0.2753
194	-8.16	-15.01	6.86	433.5902	0.9769
195	15.64	11.05	4.59	433.5902	0.7039
196	-37.45	-39.01	1.56	433.8581	1.1736
197	-30.62	-37.45	6.83	433.6918	1.1267
198	-28.13	-30.62	2.49	433.6448	0.9214
199	-24.97	-28.13	3.15	433.5949	0.8464
2	82.36	80.45	1.91	436.7409	5.3436
20	268.68	266.11	2.57	438.0886	8.0475
200	15.02	13.63	1.39	433.5949	0.4520
201	49.85	46.11	3.74	433.6025	1.5000
202	-17.02	-22.33	5.31	433.4553	1.4534
203	15.42	10.37	5.05	433.4553	0.6938
204	19.21	15.42	3.79	433.5157	0.8642
205	-25.09	-28.76	3.66	434.3823	1.8701
206	18.08	15.11	2.97	433.7676	1.1763
207	25.09	18.08	7.02	433.8972	1.6322
208	-77.97	-81.95	3.97	434.0434	2.4646
209	17.16	13.51	3.64	433.7947	1.1163
21	221.29	218.89	2.40	440.4628	6.6208
210	77.97	76.90	1.07	433.9339	2.3457
211	59.74	57.07	2.67	433.7676	1.7975
212	38.61	22.99	15.61	432.7513	1.7372
213	-9.97	-16.23	6.27	433.5580	0.7305
214	-22.98	-30.86	7.88	433.6541	1.3882
215	-15.20	-16.31	1.11	433.6355	0.7340
216	0.41	-6.66	7.07	433.6299	0.4337
217	7.18	0.00	7.18	433.6925	0.4673
218	-13.03	-22.99	9.96	432.5376	1.0352
219	2.06	-5.87	7.92	432.5302	0.2642
22	288.63	284.69	3.94	442.0247	8.6113
220	52.99	45.80	7.19	432.5310	2.3847
221	27.39	26.10	1.29	433.4017	1.2326
222	7.17	0.00	7.17	432.5079	0.4668
223	43.74	35.65	8.09	431.8610	1.9698
224	-0.70	-5.67	4.97	433.6329	0.3689
225	38.20	35.06	3.13	434.7629	1.7171
226	26.99	18.68	8.31	431.3723	1.2162
227	35.65	32.09	3.56	431.6377	1.6063
228	-0.00	-10.59	10.59	431.2151	0.4775
229	5.10	-0.00	5.10	431.6328	0.2299
23	6.16	-0.00	6.16	432.9322	0.4010
230	0.70	-0.94	1.64	433.6327	0.0613
231	46.24	38.77	7.48	437.5915	2.9977
232	5.90	-0.00	5.90	433.0225	0.2656
233	-69.68	-77.49	7.81	443.8225	4.9922

24	14.09	6.16	7.93	432.9520	0.9173
25	-97.92	-99.04	1.12	456.0648	4.3871
26	83.43	74.55	8.88	450.2012	5.3469
27	137.62	133.20	4.42	458.5592	8.7596
28	14.49	10.14	4.35	455.9521	0.9284
29	100.08	91.25	8.82	450.3757	6.4027
3	74.17	70.54	3.63	445.1439	3.3094
30	25.94	20.54	5.40	450.2012	1.1541
31	-58.95	-65.31	6.36	449.2372	2.9052
32	330.23	327.90	2.32	446.1364	9.8314
33	273.55	271.27	2.28	449.2372	8.1321
34	333.23	328.67	4.56	451.3961	9.8651
35	451.17	449.08	2.09	457.5223	10.3395
36	535.39	533.27	2.11	460.1649	12.2392
37	551.99	549.16	2.83	463.7996	12.5751
38	1157.21	1154.29	2.92	488.1515	15.8485
39	-78.12	-81.42	3.30	467.5082	5.1699
4	6.13	-0.00	6.13	448.2643	0.3949
40	-763.28	-764.37	1.09	471.8379	17.3545
41	-619.70	-620.99	1.30	468.9263	14.1194
42	-61.67	-67.71	6.04	466.1545	4.3016
43	78.12	75.96	2.16	466.1545	4.9678
44	-104.96	-109.34	4.38	456.5152	4.8368
45	3.51	-0.00	3.51	469.6953	0.2229
46	92.10	84.93	7.17	469.7000	5.8258
47	22.24	17.95	4.29	433.7223	1.4473
48	8.43	6.55	1.88	433.9834	0.2536
49	44.62	39.29	5.33	433.9868	1.3422
5	12.62	6.13	6.49	448.2837	0.8129
50	84.91	78.45	6.46	434.1732	2.5530
51	101.36	96.42	4.94	434.8975	3.0459
52	859.63	856.47	3.16	475.4232	19.4266
53	-118.99	-125.01	6.01	435.3234	3.7539
54	-48.72	-54.88	6.16	434.5129	2.4667
55	-17.97	-19.89	1.92	434.4691	0.8944
56	-38.19	-41.14	2.95	434.2264	1.8500
58	-6.62	-8.14	1.52	433.7757	0.5296
59	-2.90	-6.62	3.71	433.7555	0.4305
6	18.68	10.59	8.08	431.2507	0.8417
60	13.51	12.11	1.40	433.7555	0.8792
62	82.96	81.95	1.02	434.4728	2.4950
63	22.95	15.66	7.29	434.5889	1.0319
64	-10.97	-12.11	1.15	434.7516	0.5447
65	19.47	17.79	1.68	434.7516	0.8753
66	-31.12	-36.94	5.82	433.9045	2.4024
67	16.91	7.89	9.03	433.9045	0.5089
68	21.21	16.91	4.30	433.9448	0.6381
69	41.11	36.90	4.20	433.9834	2.6730
7	1159.99	1157.21	2.77	494.2305	15.8245
70	45.10	41.50	3.60	434.7926	2.9308
71	26.38	20.79	5.59	435.6242	1.7136
72	69.07	67.31	1.76	434.5889	2.0769
73	64.11	54.94	9.17	434.7327	1.9270
74	-48.47	-55.12	6.65	449.3100	3.5438
75	5.48	-0.00	5.48	446.0204	0.3535
76	-30.11	-35.67	5.56	445.7038	1.5913
77	-30.03	-30.11	0.08	445.6999	1.3436
78	-24.50	-30.03	5.53	445.4639	1.3400
79	127.85	124.00	3.85	445.4639	5.6969
80	107.39	101.81	5.59	447.8794	4.7772
81	113.05	107.39	5.66	450.3941	5.0193
82	122.18	113.05	9.13	453.1849	5.4060
83	127.77	122.18	5.59	458.2259	5.6401

84	132.83	127.77	5.06	461.6549	5.8503
85	142.28	132.83	9.45	464.9920	6.2378
86	-43.34	-48.47	5.13	448.0093	3.1205
87	0.00	-5.93	5.93	456.4976	0.3797
88	-90.11	-95.10	4.99	448.3926	4.2308
89	-64.16	-69.68	5.52	442.6902	3.1136
9	58.03	49.80	8.23	440.4628	2.5968
90	-58.03	-64.16	6.13	441.6192	2.8690
91	8.07	3.64	4.44	433.3338	0.5254
92	14.17	8.07	6.10	433.3679	0.9221
93	37.31	33.36	3.95	433.2384	1.6790
94	55.15	51.48	3.68	433.5045	2.4812
95	77.79	74.95	2.85	434.0131	3.4979
96	-12.04	-26.50	14.46	433.9057	1.7235
97	33.84	28.97	4.87	433.9057	1.5220
98	41.01	38.51	2.50	433.6988	1.8449
99	13.70	5.90	7.80	433.0291	0.6167