LISTATO DI CALCOLO – FASE 2 – SEZ B – COESIONE 0

RICERCA SUPERFICIE CRITICA CIRCOLARE

Analisi di stabilità dei pendii con: JANBU (1956)

Lat./Long.	44.416126/9.128522
Normativa	NTC 2008
Numero di strati	4.0
Numero dei conci	25.0
Grado di sicurezza ritenuto accettabile	1.1
Coefficiente parziale resistenza	1.1
Analisi	Condizione drenata
Superficie di forma circolare	

Maglia dei Centri

Ascissa vertice sinistro inferiore xi	0.0 m
Ordinata vertice sinistro inferiore yi	80.0 m
Ascissa vertice destro superiore xs	160.0 m
Ordinata vertice destro superiore ys	350.0 m
Passo di ricerca	10.0
Numero di celle lungo x	20.0
Numero di celle lungo y	20.0

Coefficienti sismici [N.T.C.]

Dati generali

Tipo opera:	2 - Opere ordinarie
Classe d'uso:	Classe I
Vita nominale:	50.0 [anni]
Vita di riferimento:	35.0 [anni]

Parametri sismici su sito di riferimento

Categoria sottosuolo:	C
Categoria topografica:	T3

S.L. Stato limite	TR Tempo ritorno [anni]	ag [m/s²]	F0 [-]	TC* [sec]
S.L.O.	30.0	0.27	2.5	0.2
S.L.D.	35.0	0.29	2.52	0.2
S.L.V.	332.0	0.73	2.53	0.28
S.L.C.	682.0	0.96	2.5	0.29

Coefficienti sismici orizzontali e verticali

Opera: Stabilità dei pendii e Fondazioni

S.L. Stato limite	amax [m/s²]	beta [-]	kh [-]	kv [sec]
S.L.O.	0.486	0.2	0.0099	0.005
S.L.D.	0.522	0.2	0.0106	0.0053
S.L.V.	1.314	0.2	0.0268	0.0134
S.L.C.	1.728	0.2	0.0352	0.0176

Coefficiente azione sismica orizzontale	0.027
Coefficiente azione sismica verticale	0.01 3

Vertici profilo

N	X m	y m

1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	46.1	17.82
6	57.38	17.82
7	59.14	21.76
8	77.88	24.89
9	79.34	28.89
10	87.43	30.89
11	93.0	30.89
12	94.49	34.89
13	102.3	37.98
14	107.65	37.98
15	109.05	41.99
16	116.97	45.81
17	122.21	45.81
18	123.59	49.81
19	131.26	51.82
20	136.53	51.82
21	137.85	56.02
22	146.05	58.02
23	154.97	58.02
24	172.03	70.0
25	176.27	70.0
26	201.62	74.54
27	205.25	74.53
28	219.84	84.0
29	225.33	84.4
30	235.28	90.03
31	271.64	88.91
32	282.7	88.53
33	289.11	88.6 8

Falda

Nr.	X (m)	y (m)
1	-0.3	-0.52
2	39.1	10.3
3	82.12	14.39
4	121.91	24.44
5	159.28	41.98
6	179.86	58.11
7	202.99	68.81
8	231.62	74.84
9	257.74	77.35
10	289.64	80.6 2

Vertici strato 1

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	37.68	12.99
7	64.06	13.96
8	76.83	15.78
9	98.11	17.87
10	110.05	22.38
11	132.06	29.02
12	146.92	36.18

13	155.14	41.22
14	161.51	46.52
15	169.47	50.77
16	178.51	60.13
17	197.55	68.85
18	208.25	71.0
19	228.49	80.0
20	272.76	88.87
21	282.7	88.53
22	289.11	88.6 8

Vertici strato 2

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.27
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	38.56	12.1
7	64.37	12.92
8	76.19	14.76
9	85.97	15.84
10	98.38	17.08
11	110.84	21.59
12	132.6	28.22
13	147.98	36.18
14	153.82	40.16
15	162.57	45.73
16	169.2	49.18
17	174.21	54.9
18	178.51	59.23
19	197.94	67.72
20	212.1	70.67
21	223.0	75.35
22	230.56	77.31
23	262.24	80.63
24	281.0	81.67
25	289.11	83.6 9

Vertici strato 3

N	X (m)	y (m)
1	0.0	0.0
2	26.2	17.22
3	29.65	17.44
4	33.37	16.92
5	36.74	13.96
6	42.18	8.4
7	65.63	9.78
8	79.0	11.82
9	93.34	13.63
10	132.33	25.3
11	147.96	31.81
12	159.17	38.21
13	167.34	43.58
14	176.99	52.15
15	182.36	55.06
16	192.72	59.7
17	209.83	66.16
18	232.16	72.24
19	275.95	77.07
20	289.11	79.45

Coefficienti parziali per i parametri geotecnici del terreno

Tangente angolo di resistenza al taglio	1.25
Coesione efficace	1.25
Coesione non drenata	1.4
Riduzione parametri geotecnici terreno	Si

Stratigrafia

c: coesione; cu: coesione non drenata; Fi: Angolo di attrito; G: Peso Specifico; Gs: Peso Specifico Saturo; K: Modulo di Winkler

Strato	c (kg/cm²)	cu (kg/cm²)	Fi (°)	G (Kg/m³)	Gs (Kg/m³)	K (Kg/cm³)	Litologia	
1	0		29.60	1837	2063	0.00		
2	0		26.51	1695	1905	0.00		
3	0.3305		30.52	2402	2698	0.00		
4	0.4352		33.31	2402	2698	0.00		

Terra rinforzata

No	X (m)	Y (m)	Stato	Tipologia
1	57.38	17.82	Attivato	terra 4
2	77.88	24.89	Attivato	terra 4
3	93	30.89	Attivato	terre 18m
4	107.65	37.98	Attivato	terre 18m
5	122.21	45.81	Attivato	terre 18m
6	136.53	51.82	Attivato	terre 18m

Risultati analisi pendio [NTC 2008: [A2+M2+R2]]

Fs minimo individuato	0.92
Ascissa centro superficie	156.0 m
Ordinata centro superficie	86.75 m
Raggio superficie	28.05 m

Numero di superfici esaminate....(691)

N°	Xo	Yo	Ro	Fs
1	0.0	80.0	72.2	3.17
2	4.0	86.8	78.6	3.05
3	8.0	80.0	72.6	2.88
4	12.0	86.8	79.3	3.11
5	16.0	80.0	73.7	3.26
6	20.0	86.8	80.6	3.16
7	24.0	80.0	67.3	5.91
8	28.0	86.8	82.1	2.83
9	32.0	80.0	75.9	2.88
10	36.0	86.8	82.1	2.88
11	40.0	80.0	67.8	2.98
12	44.0	86.8	73.4	2.41
13	48.0	80.0	67.8	2.60
14	52.0	86.8	73.3	1.76
15	56.0	80.0	59.8	1.31
16	60.0	86.8	64.6	1.26
17	64.0	80.0	67.9	1.59
18	68.0	86.8	73.2	1.35
19	72.0	80.0	67.9	1.36
20	76.0	86.8	73.2	1.32
21	80.0	80.0	59.9	1.24
22	84.0	86.8	64.4	1.24

23	88.0	80.0	59.6	1.23
24	92.0	86.8	64.3	1.17
25	96.0	80.0	59.4	1.19
26	100.0	86.8	63.7	1.24
27	104.0	80.0	52.1	1.21
28	108.0	86.8	64.2	1.31
29	112.0	80.0	50.7	1.33
30	116.0	86.8	55.3	1.32
31	120.0	80.0	50.8	1.38
32	124.0	86.8	54.7	1.27
33	128.0	80.0	51.5	1.42
34	132.0	86.8	45.4	1.28
35	136.0	80.0	42.9	1.41
36	140.0	86.8	37.2	1.29
37	144.0	80.0	34.4	1.45
38	148.0	86.8	36.6	1.32
39	152.0	80.0	25.9	1.22
40	156.0	86.8	28.1	0.92
41	160.0	80.0	25.5	1.20
42	4.0	100.3	90.5	3.78
43	12.0	100.3	91.1	3.57
44	20.0	100.3	92.3	3.36
45	24.0	93.5	77.8	16.49
46	28.0	100.3	83.9	37.72
47	32.0	93.5	88.0	2.96
48	36.0	100.3	94.1	2.68
49	40.0	93.5	78.5	2.73
50	44.0	100.3	84.1	1.71
51	48.0	93.5	78.5	1.96
52	52.0	100.3	84.2	1.78
53	56.0	93.5	78.4	1.55
54	60.0	100.3	84.2	1.44
55	64.0	93.5	78.4	1.31
56	68.0	100.3	84.3	1.25
57	72.0	93.5	78.3	1.21
58	76.0	100.3	84.3	1.15
59	80.0	93.5	78.3	1.22
60	84.0	100.3	74.4	1.28
61	88.0	93.5	68.6	1.21
62	92.0	100.3	73.6	1.18
63	96.0	93.5	68.5	1.21
64	100.0	100.3	74.5	1.18
65	104.0	93.5	68.4	1.20
66	108.0	100.3	73.7	1.17
67	112.0	93.5	68.3	1.26
68	116.0	100.3	63.6	1.18
69	120.0	93.5	58.5	1.21
70	124.0	100.3	64.5	1.23
71	128.0	93.5	58.6	1.26
72	132.0	100.3	53.4	1.23
73	136.0	93.5	48.8	1.30
74	140.0	100.3	52.6	1.34
75	144.0	93.5	39.1	1.28
76	148.0	100.3	43.2	0.98
77	152.0	93.5	39.3	1.29
78	156.0	100.3	42.8	1.16
79	160.0	93.5	29.8	1.10
80	0.0	107.0	97.2	4.07
81	8.0	107.0	97.5	3.66
82	12.0	113.8	104.5	3.72
83	16.0	107.0	98.3	3.90
84	20.0	113.8	105.6	3.28
85	32.0	107.0	90.8	26.18

86	36.0	113.8	107.6	2.44
87	40.0	107.0	100.9	2.44
88	44.0	113.8	97.6	1.98
89	48.0	107.0	90.9	1.61
90	52.0	113.8	97.7	1.50
91	56.0	107.0	90.9	1.55
92	60.0	113.8	97.7	1.26
93	64.0	107.0	91.0	1.23
94	68.0	113.8	97.8	1.19
95	72.0	107.0	91.0	1.17
96	76.0	113.8	97.8	1.14
97	80.0	107.0	91.1	1.18
98	84.0	113.8	97.2	1.18
99	88.0	107.0	80.2	1.17
100	92.0	113.8	84.7	1.21
101	96.0	107.0	78.0	1.20
102	100.0	113.8	82.5	1.16
103	104.0	107.0	78.8	1.14
104	108.0	113.8	83.1	1.18
105	112.0	107.0	78.9	1.18
106	116.0	113.8	72.8	1.23
107	120.0	107.0	67.1	1.22
108	124.0	113.8	70.7	1.19
109	128.0	107.0	68.0	1.30
110	132.0	113.8	71.4	1.26
111	136.0	107.0	57.5	1.23
112	140.0	113.8	61.5	1.30
113	144.0	107.0	55.8	1.29
114	148.0	113.8	60.0	1.38
115	152.0	107.0	45.5	1.02
116	156.0	113.8	58.9	1.36
117	160.0	107.0	45.3	1.34
118	4.0	127.3	117.5	3.92
119	8.0	120.5	110.9	3.79
120	20.0	127.3	118.9	2.80
121	32.0	120.5	114.4	2.52
122	36.0	127.3	111.0	23.52
123	40.0	120.5	114.4	2.20
124	44.0	127.3	111.1	1.93
125	48.0	120.5	104.4	1.58
126	52.0	127.3	111.2	1.42
127	56.0	120.5	104.4	1.32
128	60.0	127.3	111.2	1.21
129	64.0	120.5	104.5	1.19
130	68.0	127.3	111.3	1.17
131	72.0	120.5	104.5	1.18
132	76.0	127.3	110.5	1.12
133	80.0	120.5	103.8	1.15
134	84.0	127.3	109.1	1.14
135	88.0	120.5	102.4	1.19
136	92.0	127.3	107.6	1.25
137	96.0	120.5	89.1	1.19
138	100.0	127.3	93.6	1.14
139	104.0	120.5	87.4	1.13
140	108.0	127.3	92.4	1.14
141	112.0	120.5	87.4	1.19
142	116.0	127.3	92.1	1.20
143	120.0	120.5	77.1	1.20
144	124.0	127.3	80.6	1.33
145	128.0	120.5	75.3	1.23
146	132.0	127.3	79.9	1.30
147	136.0	120.5	74.9	1.38
148	140.0	127.3	79.2	1.45

149	144.0	120.5	64.1	1.14
150	148.0	127.3	66.7	1.16
151	152.0	120.5	64.2	1.31
152	156.0	127.3	67.6	1.40
153	160.0	120.5	63.1	1.39
154	0.0	134.0	124.2	4.11
155	12.0	140.8	131.4	3.43
156	20.0	140.8	132.3	2.92
157	28.0	140.8	133.5	2.31
158	32.0	134.0	127.7	2.30
159	36.0	140.8	134.6	2.05
160	40.0	134.0	117.8	2.38
161	44.0	140.8	124.6	1.83
162	48.0	134.0	117.9	1.54
163	52.0	140.8	124.7	1.32
164	56.0	134.0	117.9	1.26
165	60.0	140.8	124.7	1.16
166	64.0	134.0	118.0	1.16
167	68.0	140.8	123.9	1.12
168	72.0	134.0	117.2	1.13
169	76.0	140.8	122.4	1.12
170	80.0	134.0	115.7	1.11
171	84.0	140.8	121.0	1.12
172	88.0	134.0	114.3	1.09
173	92.0	140.8	119.5	1.25
174	96.0	134.0	100.2	1.19
175	100.0	140.8	104.7	1.16
176	104.0	134.0	98.0	1.15
177	108.0	140.8	102.5	1.17
178	112.0	134.0	97.3	1.17
179	116.0	140.8	102.3	1.21
180	120.0	134.0	97.2	1.27
181	124.0	140.8	102.4	1.41
182	128.0	134.0	84.1	1.38
183	132.0	140.8	87.6	1.39
184	136.0	134.0	84.5	1.30
185	140.0	140.8	88.2	1.40
186	144.0	134.0	83.9	1.51
187	148.0	140.8	102.6	1.65
188	152.0	134.0	96.8	1.68
189	156.0	140.8	100.3	1.72
190	160.0	134.0	69.5	1.69
191	0.0	147.5	137.7	4.05
192	4.0	154.3	144.5	4.06
193	8.0	147.5	137.9	3.99
194	12.0	154.3	144.9	3.24
195	16.0	147.5	138.5	2.77
196	20.0	154.3	145.7	2.84
197	24.0	147.5	139.5	2.45
198	32.0	147.5	140.9	2.03
199	36.0	154.3	138.0	21.26
200	40.0	147.5	131.3	2.17
201	44.0	154.3	138.1	1.72
202	48.0	147.5	141.4	1.81
203	52.0	154.3	138.2	1.21
204	56.0	147.5	131.4	1.18
205	60.0	154.3	137.3	1.15
206	64.0	147.5	130.6	1.14
207	68.0	154.3	135.8	1.10
208	72.0	147.5	129.1	1.11
209	76.0	154.3	134.3	1.11
210	80.0	147.5	127.6	1.12
211	84.0	154.3	132.9	1.12

212	88.0	147.5	126.2	1.14
213	92.0	154.3	131.4	1.26
214	96.0	147.5	111.3	1.22
215	100.0	154.3	115.8	1.22
216	104.0	147.5	109.1	1.18
217	108.0	154.3	113.6	1.20
218	112.0	147.5	107.0	1.21
219	116.0	154.3	111.4	1.22
220	120.0	147.5	106.8	1.31
221	124.0	154.3	111.1	1.35
222	128.0	147.5	107.6	1.51
223	132.0	154.3	112.7	1.54
224	136.0	147.5	106.2	1.57
225	140.0	154.3	95.3	1.22
226	144.0	147.5	91.6	1.36
227	148.0	154.3	93.5	1.42
228	152.0	147.5	91.5	1.46
229	156.0	154.3	104.9	1.66
230	160.0	147.5	86.2	1.68
231	4.0	167.8	158.0	4.12
232	8.0	161.0	151.4	4.18
233	16.0	161.0	151.9	2.82
234	20.0	167.8	159.1	2.40
235	24.0	161.0	152.9	2.27
236	28.0	167.8	160.1	1.93
237	32.0	161.0	154.1	1.87
238	36.0	167.8	161.5	1.78
239	40.0	161.0	144.8	1.75
240	44.0	167.8	151.6	1.43
241	48.0	161.0	144.9	1.29
242	52.0	167.8	150.6	1.16
243	56.0	161.0	143.9	1.16
244	60.0	167.8	149.2	1.10
245	64.0	161.0	142.5	1.10
246	68.0	167.8	147.7	1.10
247	72.0	161.0	141.0	1.10
248	76.0	167.8	146.2	1.11
249	80.0	161.0	139.5	1.12
250	84.0	167.8	144.8	1.14
251	88.0	161.0	138.1	1.22
252	92.0	167.8	143.3	1.24
253	96.0	161.0	136.6	1.29
254	100.0	167.8	126.9	1.30
255	104.0	161.0	120.2	1.23
256	108.0	167.8	124.7	1.28
257	112.0	161.0	118.1	1.23
258	116.0	167.8	122.5	1.31
259	120.0	161.0	115.9	1.30
260	124.0	167.8	120.3	1.34
261	128.0	161.0	115.6	1.52
262	132.0	167.8	120.8	1.56
263	136.0	161.0	101.0	1.18
264	140.0	167.8	119.3	1.52
265	144.0	161.0	98.2	1.41
266	148.0	167.8	114.4	1.61
267	152.0	161.0	108.9	1.55
268	156.0	167.8	109.2	1.54
269	160.0	161.0	104.1	1.54
270	0.0	174.5	164.7	4.22
271	4.0	181.3	171.5	4.29
272	12.0	181.3	171.8	2.77
273	20.0	181.3	172.5	2.21
274	28.0	181.3	173.5	1.74

275	36.0	181.3	174.7	1.68
276	40.0	174.5	158.3	1.60
277	44.0	181.3	174.6	1.65
278	48.0	174.5	157.3	1.18
279	52.0	181.3	162.5	1.14
280	56.0	174.5	155.8	1.13
281	60.0	181.3	161.1	1.08
282	64.0	174.5	154.4	1.09
283	68.0	181.3	159.6	1.09
284	72.0	174.5	152.9	1.10
285	76.0	181.3	158.1	1.12
286	80.0	174.5	151.5	1.12
287	84.0	181.3	156.7	1.20
288	88.0	174.5	150.0	1.26
289	92.0	181.3	155.2	1.33
290	96.0	174.5	148.5	1.32
291	100.0	181.3	153.7	1.39
292	104.0	174.5	131.4	1.40
293	108.0	181.3	152.3	1.44
294	112.0	174.5	129.2	1.38
295	116.0	181.3	133.6	1.41
296	120.0	174.5	127.0	1.40
297	124.0	181.3	131.4	1.42
298	128.0	174.5	125.1	1.38
299	132.0	181.3	128.1	1.50
300	136.0	174.5	123.9	1.61
301	140.0	181.3	124.3	1.42
302	144.0	174.5	118.7	1.39
303	148.0	181.3	118.4	1.65
304	152.0	174.5	114.2	1.50
305	156.0	181.3	130.0	1.79
306	160.0	174.5	109.8	1.69
307	0.0	188.0	178.2	4.24
308	4.0	194.8	185.0	3.41
309	12.0	194.8	185.3	2.76
310	20.0	194.8	185.9	2.01
311	24.0	188.0	179.6	1.83
312	28.0	194.8	186.8	1.63
313	36.0	194.8	176.8	1.72
314	44.0	194.8	175.9	1.29
315	48.0	188.0	169.2	1.17
316	52.0	194.8	174.4	1.11
317	56.0	188.0	167.7	1.09
318	60.0	194.8	173.0	1.07
319	64.0	188.0	166.3	1.08
320	68.0	194.8	171.5	1.10
321	72.0	188.0	164.8	1.11
322	76.0	194.8	170.0	1.15
323	80.0	188.0	163.4	1.18
324	84.0	194.8	168.6	1.25
325	88.0	188.0	161.9	1.27
326	92.0	194.8	167.1	1.33
327	96.0	188.0	160.4	1.40
328	100.0	194.8	165.6	1.40
329	104.0	188.0	159.0	1.41
330	108.0	194.8	164.2	1.48
331	112.0	188.0	157.5	1.48
332	116.0	194.8	162.7	1.51
333	120.0	188.0	138.1	1.47
334	124.0	194.8	140.8	1.41
335	128.0	188.0	134.0	1.43
336	132.0	194.8	133.9	1.38
337	136.0	188.0	128.2	1.39

338	140.0	194.8	146.4	1.62
339	144.0	188.0	124.9	1.63
340	148.0	194.8	142.4	1.58
341	152.0	188.0	135.5	1.71
342	156.0	194.8	136.5	1.57
343	160.0	188.0	130.3	1.58
344	0.0	201.5	191.7	4.39
345	4.0	208.3	198.5	3.14
346	8.0	201.5	191.8	2.94
347	12.0	208.3	198.8	2.29
348	16.0	201.5	192.3	2.23
349	20.0	208.3	199.4	1.74
350	24.0	201.5	193.0	1.66
351	28.0	208.3	199.6	1.56
352	32.0	201.5	193.4	1.52
353	36.0	208.3	199.9	1.49
354	40.0	201.5	182.5	1.46
355	44.0	208.3	187.8	1.31
356	48.0	201.5	181.1	1.16
357	52.0	208.3	186.3	1.09
358	56.0	201.5	179.6	1.06
359	60.0	208.3	184.9	1.08
360	64.0	201.5	178.2	1.09
361	68.0	208.3	183.4	1.11
362	72.0	201.5	176.7	1.12
363	76.0	208.3	181.9	1.19
364	80.0	201.5	175.3	1.20
365	84.0	208.3	180.5	1.26
366	88.0	201.5	173.8	1.30
367	92.0	208.3	179.0	1.35
368	96.0	201.5	172.3	1.36
369	100.0	208.3	177.6	1.41
370	104.0	201.5	170.9	1.45
371	108.0	208.3	158.0	1.45
372	112.0	201.5	169.4	1.51
373	116.0	208.3	173.1	1.53
374	120.0	201.5	166.2	1.54
375	124.0	208.3	166.5	1.57
376	128.0	201.5	159.4	1.57
377	132.0	208.3	159.9	1.45
378	136.0	201.5	152.8	1.46
379	140.0	208.3	153.4	1.54
380	144.0	201.5	147.4	1.49
381	148.0	208.3	148.6	1.35
382	152.0	201.5	142.9	1.47
383	156.0	208.3	143.7	1.44
384	160.0	201.5	137.8	1.41
385	8.0	215.0	205.3	2.55
386	12.0	221.8	212.3	2.10
387	16.0	215.0	205.8	1.91
388	20.0	221.8	212.1	1.60
389	24.0	215.0	205.8	1.57
390	28.0	221.8	212.2	1.46
391	32.0	215.0	194.6	3.15
392	36.0	221.8	212.5	1.43
393	40.0	215.0	206.4	1.49
394	44.0	221.8	199.7	1.31
395	48.0	215.0	193.0	1.16
396	52.0	221.8	198.2	1.10
397	56.0	215.0	191.5	1.08
398	60.0	221.8	196.8	1.11
399	64.0	215.0	190.1	1.10
400	68.0	221.8	195.3	1.14

401	72.0	215.0	188.6	1.14
402	76.0	221.8	193.8	1.24
403	80.0	215.0	187.2	1.24
404	84.0	221.8	192.4	1.28
405	88.0	215.0	185.7	1.31
406	92.0	221.8	190.9	1.34
407	96.0	215.0	184.2	1.41
408	100.0	221.8	189.5	1.44
409	104.0	215.0	182.8	1.46
410	108.0	221.8	187.2	1.47
411	112.0	215.0	180.1	1.49
412	116.0	221.8	180.6	1.50
413	120.0	215.0	173.5	1.51
414	124.0	221.8	174.1	1.48
415	128.0	215.0	167.0	1.44
416	132.0	221.8	167.7	1.40
417	136.0	215.0	160.5	1.52
418	140.0	221.8	161.4	1.48
419	144.0	215.0	154.2	1.47
420	148.0	221.8	174.6	1.87
421	152.0	215.0	168.2	1.88
422	156.0	221.8	170.0	1.95
423	4.0	235.3	225.5	2.45
424	16.0	228.5	218.5	1.70
425	24.0	228.5	218.4	1.46
426	28.0	235.3	224.8	1.37
427	36.0	235.3	225.0	1.40
428	40.0	228.5	219.0	1.41
429	44.0	235.3	211.6	1.37
430	48.0	228.5	204.9	1.19
431	52.0	235.3	210.1	1.15
432	56.0	228.5	203.4	1.11
433	60.0	235.3	208.7	1.15
434	64.0	228.5	202.0	1.14
435	68.0	235.3	207.2	1.17
436	72.0	228.5	200.5	1.19
437	76.0	235.3	205.7	1.28
438	80.0	228.5	199.1	1.27
439	84.0	235.3	204.3	1.27
440	88.0	228.5	197.6	1.33
441	92.0	235.3	202.8	1.37
442	96.0	228.5	196.1	1.42
443	100.0	235.3	201.4	1.43
444	104.0	228.5	175.4	1.09
445	108.0	235.3	194.9	1.36
446	112.0	228.5	187.7	1.47
447	116.0	235.3	188.5	1.49
448	120.0	228.5	181.3	1.47
449	124.0	235.3	182.2	1.45
450	128.0	228.5	174.9	1.42
451	132.0	235.3	176.0	1.57
452	136.0	228.5	168.7	1.61
453	140.0	235.3	169.9	2.02
454	144.0	228.5	162.6	2.10
455	148.0	235.3	183.7	1.89
456	156.0	235.3	178.3	1.81
457	4.0	248.8	238.2	2.37
458	8.0	242.0	231.6	2.16
459	12.0	248.8	237.7	1.67
460	16.0	242.0	231.2	1.58
461	28.0	248.8	237.4	1.32
462	32.0	242.0	218.2	5.59
463	36.0	248.8	223.8	2.91

464	40.0	242.0	231.5	1.41
465	44.0	248.8	223.4	1.48
466	48.0	242.0	216.8	1.25
467	52.0	248.8	222.0	1.21
468	56.0	242.0	215.3	1.17
469	60.0	248.8	220.6	1.19
470	64.0	242.0	213.9	1.18
471	72.0	242.0	212.4	1.22
472	76.0	248.8	217.6	1.33
473	80.0	242.0	211.0	1.33
474	84.0	248.8	216.2	1.32
475	88.0	242.0	209.5	1.30
476	92.0	248.8	214.7	1.41
477	96.0	242.0	208.0	1.42
478	100.0	248.8	209.3	1.39
479	104.0	242.0	202.1	1.36
480	108.0	248.8	203.0	1.55
481	112.0	242.0	195.7	1.52
482	116.0	248.8	196.8	1.48
483	120.0	242.0	189.5	1.48
484	124.0	248.8	190.6	1.50
485	128.0	242.0	183.3	1.53
486	132.0	248.8	204.5	1.75
487	136.0	242.0	177.3	1.94
488	140.0	248.8	198.7	1.82
489	152.0	242.0	185.6	1.75
490	156.0	248.8	187.7	1.75
491	4.0	262.3	250.9	2.17
492	8.0	255.5	244.3	1.89
493	28.0	262.3	250.0	1.28
494	32.0	255.5	243.8	1.31
495	36.0	262.3	235.6	3.43
496	40.0	255.5	244.0	1.42
497	44.0	262.3	250.5	1.50
498	52.0	262.3	233.9	1.22
499	56.0	255.5	243.4	1.59
500	60.0	262.3	232.5	1.22
501	64.0	255.5	225.8	1.22
502	68.0	262.3	231.0	1.23
503	72.0	255.5	224.3	1.25
504	76.0	262.3	229.5	1.33
505	80.0	255.5	222.9	1.33
506	84.0	262.3	228.1	1.32
507	88.0	255.5	221.4	1.27
508	92.0	262.3	223.7	1.41
509	96.0	255.5	216.5	1.38
510	108.0	262.3	211.3	1.56
511	112.0	255.5	204.0	1.49
512	116.0	262.3	205.2	1.44
513	120.0	255.5	197.9	1.47
514	128.0	255.5	211.9	1.73
515	132.0	262.3	213.8	1.74
516	136.0	255.5	206.2	1.78
517	140.0	262.3	208.2	1.66
518	144.0	255.5	200.7	1.68
519	0.0	269.0	257.6	5.52
520	8.0	269.0	257.0	1.79
521	16.0	269.0	256.6	1.32
522	20.0	275.8	262.8	1.24
523	24.0	269.0	256.4	1.28
524	32.0	269.0	256.4	1.26
525	36.0	275.8	262.8	1.32
526	40.0	269.0	256.6	1.32

527	44.0	275.8	263.1	1.39
528	48.0	269.0	240.6	1.36
529	52.0	275.8	245.8	1.30
530	56.0	269.0	239.1	1.24
531	60.0	275.8	244.4	1.25
532	64.0	269.0	237.7	1.23
533	68.0	275.8	242.9	1.24
534	72.0	269.0	236.2	1.33
535	76.0	275.8	241.4	1.35
536	80.0	269.0	234.7	1.35
537	84.0	275.8	238.1	1.44
538	88.0	269.0	230.9	1.43
539	92.0	275.8	231.9	1.45
540	100.0	275.8	225.8	1.53
541	104.0	269.0	218.6	1.54
542	108.0	275.8	219.8	1.39
543	112.0	269.0	212.5	1.41
544	128.0	269.0	221.3	1.74
545	132.0	275.8	223.4	1.62
546	136.0	269.0	215.8	1.63
547	148.0	275.8	212.9	1.40
548	152.0	269.0	205.3	1.42
549	156.0	275.8	207.9	1.42
550	160.0	269.0	200.3	1.41
551	0.0	282.5	270.3	6.29
552	8.0	282.5	269.7	1.61
553	12.0	289.3	275.8	1.28
554	20.0	289.3	275.4	1.22
555	32.0	282.5	269.0	1.28
556	36.0	289.3	259.2	7.94
557	40.0	282.5	269.2	1.35
558	48.0	282.5	252.5	1.40
559	52.0	289.3	257.6	1.39
560	56.0	282.5	251.0	1.26
561	60.0	289.3	256.1	1.30
562	64.0	282.5	249.5	1.26
563	68.0	289.3	254.6	1.30
564	72.0	282.5	248.0	1.33
565	76.0	289.3	252.6	1.41
566	80.0	282.5	245.4	1.39
567	84.0	289.3	246.5	1.56
568	88.0	282.5	239.2	1.47
569	92.0	289.3	240.4	1.53
570	96.0	282.5	233.1	1.53
571	100.0	289.3	234.5	1.34
572	104.0	282.5	227.2	1.37
573	108.0	289.3	249.5	1.64
574	112.0	282.5	241.9	1.68
575	136.0	282.5	225.7	1.68
576	140.0	289.3	228.2	1.39
577	144.0	282.5	220.5	1.40
578	148.0	289.3	223.2	1.44
579	156.0	289.3	218.4	1.28
580	160.0	282.5	210.7	1.31
581	4.0	302.8	289.0	8.49
582	8.0	296.0	282.4	7.78
583	20.0	302.8	288.0	1.20
584	24.0	296.0	281.6	1.22
585	28.0	302.8	287.9	1.27
586	32.0	296.0	281.6	1.27
587	36.0	302.8	287.9	1.29
588	40.0	296.0	264.7	2.37
589	44.0	302.8	288.0	1.36

590	48.0	296.0	282.0	1.41
591	52.0	302.8	269.3	1.46
592	56.0	296.0	281.4	1.47
593	60.0	302.8	267.8	1.36
594	64.0	296.0	280.6	1.52
595	68.0	302.8	266.3	1.34
596	72.0	296.0	259.7	1.32
597	76.0	302.8	281.6	1.52
598	80.0	296.0	274.1	1.53
599	84.0	302.8	275.8	1.52
600	88.0	296.0	268.3	1.53
601	92.0	302.8	249.2	1.30
602	96.0	296.0	241.8	1.32
603	104.0	296.0	257.0	1.62
604	108.0	302.8	259.1	1.63
605	112.0	296.0	251.5	1.66
606	116.0	302.8	253.7	1.57
607	132.0	302.8	243.4	1.36
608	140.0	302.8	238.5	1.44
609	144.0	296.0	230.8	1.44
610	148.0	302.8	233.7	1.24
611	152.0	296.0	226.0	1.26
612	0.0	309.5	295.6	9.69
613	4.0	316.3	301.6	12.16
614	8.0	309.5	295.0	10.04
615	16.0	309.5	294.5	11.15
616	20.0	316.3	300.6	13.81
617	24.0	309.5	294.2	1.20
618	28.0	316.3	300.4	1.26
619	32.0	309.5	294.1	1.26
620	40.0	309.5	276.3	19.21
621	44.0	316.3	300.5	1.37
622	48.0	309.5	294.4	1.45
623	52.0	316.3	281.0	1.55
624	56.0	309.5	274.4	1.43
625	60.0	316.3	279.5	1.43
626	64.0	309.5	272.9	1.35
627	72.0	309.5	289.0	1.51
628	76.0	316.3	290.8	1.51
629	80.0	309.5	262.4	20.00
630	84.0	316.3	263.9	1.27
631	88.0	309.5	256.6	1.28
632	92.0	316.3	279.6	1.59
633	96.0	309.5	272.1	1.59
634	104.0	309.5	266.6	1.62
635	108.0	316.3	268.9	1.57
636	112.0	309.5	261.3	1.56
637	116.0	316.3	263.7	1.68
638	124.0	316.3	258.7	1.34
639	136.0	309.5	246.1	1.43
640	140.0	316.3	249.0	2.58
641	8.0	323.0	307.6	18.35
642	16.0	323.0	307.1	18.11
643	20.0	329.8	313.2	38.18
644	24.0	323.0	306.8	20.11
645	28.0	329.8	313.0	33.75
646	32.0	323.0	306.7	1.27
647	36.0	329.8	312.9	1.32
648	40.0	323.0	306.7	1.34
649	44.0	329.8	313.0	1.41
650	48.0	323.0	287.3	1.96
651	52.0	329.8	292.8	1.80
652	56.0	323.0	306.6	1.51

653	60.0	329.8	311.5	1.51
654	64.0	323.0	304.0	1.51
655	68.0	329.8	305.8	1.50
656	72.0	323.0	298.3	1.52
657	76.0	329.8	300.2	1.53
658	84.0	329.8	294.7	1.55
659	96.0	323.0	281.8	1.59
660	104.0	323.0	276.5	1.56
661	112.0	323.0	271.4	1.60
662	132.0	329.8	264.3	2.26
663	136.0	323.0	256.7	2.39
664	12.0	343.3	326.2	1.14
665	20.0	343.3	325.8	1.16
666	36.0	343.3	325.5	1.33
667	40.0	336.5	319.2	1.34
668	48.0	336.5	319.4	1.41
669	52.0	343.3	325.8	1.49
670	60.0	343.3	320.8	1.48
671	64.0	336.5	313.3	1.50
672	68.0	343.3	315.3	1.49
673	72.0	336.5	307.8	1.54
674	76.0	343.3	309.9	1.52
675	80.0	336.5	302.3	1.52
676	88.0	336.5	297.0	1.56
677	92.0	343.3	299.4	1.55
678	100.0	343.3	294.3	1.57
679	104.0	336.5	286.6	1.56
680	120.0	336.5	276.7	1.40
681	124.0	343.3	279.7	2.07
682	128.0	336.5	272.0	2.16
683	16.0	350.0	332.3	1.15
684	24.0	350.0	331.9	1.23
685	40.0	350.0	331.8	1.39
686	56.0	350.0	328.4	1.46
687	64.0	350.0	322.9	1.48
688	80.0	350.0	312.2	1.56
689	104.0	350.0	296.9	1.35
690	112.0	350.0	292.1	1.38
691	120.0	350.0	287.3	1.99

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