

# Table of Pitch Diameters

## 6 to 53 Teeth

To find Outside Diameter add 2 teeth.

Theoretical P.D.s only. All gears cut to AGMA Standards.

N = Number of Teeth Applies to Spur & Bevel Gears Only - Not to Helical Gears.

N	DIAMETRAL PITCH												N	
	16	20	24	1/10	32	48	1/20	64	72	80	96	100		120
6	.3750	.3000	.2500	.1909	.1875	.1250	.0954	.0937	.0833	.0750	.0625	.0600	.0500	6
7	.4375	.3500	.2916	.2228	.2187	.1458	.1114	.1093	.0972	.0875	.0729	.0700	.0583	7
8	.5000	.4000	.3333	.2546	.2500	.1666	.1273	.1250	.1111	.1000	.0833	.0800	.0666	8
9	.5625	.4500	.3750	.2864	.2812	.1875	.1432	.1406	.1250	.1125	.0937	.0900	.0750	9
10	.6250	.5000	.4166	.3183	.3125	.2083	.1591	.1562	.1388	.1250	.1041	.1000	.0833	10
11	.6875	.5500	.4583	.3501	.3437	.2291	.1750	.1718	.1527	.1375	.1145	.1100	.0916	11
12	.7500	.6000	.5000	.3819	.3750	.2500	.1909	.1875	.1666	.1500	.1250	.1200	.1000	12
13	.8125	.6500	.5416	.4138	.4062	.2708	.2069	.2031	.1805	.1625	.1354	.1300	.1083	13
14	.8750	.7000	.5833	.4456	.4375	.2916	.2228	.2187	.1944	.1750	.1458	.1400	.1166	14
15	.9375	.7500	.6250	.4774	.4687	.3125	.2387	.2343	.2083	.1875	.1562	.1500	.1250	15
16	1.0000	.8000	.6666	.5092	.5000	.3333	.2546	.2500	.2222	.2000	.1666	.1600	.1333	16
17	1.0625	.8500	.7083	.5411	.5312	.3541	.2705	.2656	.2361	.2125	.1770	.1700	.1416	17
18	1.1250	.9000	.7500	.5729	.5625	.3750	.2864	.2812	.2500	.2250	.1875	.1800	.1500	18
19	1.1875	.9500	.7916	.6047	.5937	.3958	.3023	.2968	.2638	.2375	.1979	.1900	.1583	19
20	1.2500	1.0000	.8333	.6366	.6250	.4166	.3183	.3125	.2777	.2500	.2083	.2000	.1666	20
21	1.3125	1.0500	.8750	.6684	.6562	.4375	.3342	.3281	.2916	.2625	.2187	.2100	.1750	21
22	1.3750	1.1000	.9166	.7002	.6875	.4583	.3501	.3437	.3055	.2750	.2291	.2200	.1833	22
23	1.4375	1.1500	.9583	.7321	.7187	.4791	.3660	.3593	.3194	.2875	.2395	.2300	.1916	23
24	1.5000	1.2000	1.0000	.7639	.7500	.5000	.3819	.3750	.3333	.3000	.2500	.2400	.2000	24
25	1.5625	1.2500	1.0416	.7957	.7812	.5208	.3978	.3906	.3472	.3125	.2604	.2500	.2083	25
26	1.6250	1.3000	1.0833	.8276	.8125	.5416	.4138	.4062	.3611	.3250	.2708	.2600	.2166	26
27	1.6875	1.3500	1.1250	.8594	.8437	.5625	.4297	.4218	.3750	.3375	.2812	.2700	.2250	27
28	1.7500	1.4000	1.1666	.8912	.8750	.5833	.4456	.4375	.3888	.3500	.2916	.2800	.2333	28
29	1.8125	1.4500	1.2083	.9230	.9062	.6041	.4615	.4531	.4027	.3625	.3020	.2900	.2416	29
30	1.8750	1.5000	1.2500	.9549	.9375	.6250	.4774	.4687	.4166	.3750	.3125	.3000	.2500	30
31	1.9375	1.5500	1.2916	.9867	.9687	.6458	.4933	.4843	.4305	.3875	.3229	.3100	.2583	31
32	2.0000	1.6000	1.3333	1.0185	1.0000	.6666	.5092	.5000	.4444	.4000	.3333	.3200	.2666	32
33	2.0625	1.6500	1.3750	1.0504	1.0312	.6875	.5252	.5156	.4583	.4125	.3437	.3300	.2750	33
34	2.1250	1.7000	1.4166	1.0822	1.0625	.7083	.5411	.5312	.4722	.4250	.3541	.3400	.2833	34
35	2.1875	1.7500	1.4583	1.1140	1.0937	.7291	.5570	.5468	.4861	.4375	.3654	.3500	.2916	35
36	2.2500	1.8000	1.5000	1.1459	1.1250	.7500	.5729	.5625	.5000	.4500	.3750	.3600	.3000	36
37	2.3125	1.8500	1.5416	1.1777	1.1562	.7708	.5888	.5781	.5138	.4625	.3854	.3700	.3083	37
38	2.3750	1.9000	1.5833	1.2095	1.1875	.7916	.6047	.5937	.5277	.4750	.3958	.3800	.3166	38
39	2.4375	1.9500	1.6250	1.2414	1.2187	.8125	.6207	.6093	.5416	.4875	.4062	.3900	.3250	39
40	2.5000	2.0000	1.6666	1.2732	1.2500	.8333	.6366	.6250	.5555	.5000	.4166	.4000	.3333	40
41	2.5625	2.0500	1.7083	1.3050	1.2812	.8541	.6525	.6406	.5694	.5125	.4270	.4100	.3416	41
42	2.6250	2.1000	1.7500	1.3369	1.3125	.8750	.6684	.6562	.5833	.5250	.4375	.4200	.3500	42
43	2.6875	2.1500	1.7916	1.3687	1.3437	.8958	.6843	.6718	.5972	.5375	.4479	.4300	.3583	43
44	2.7500	2.2000	1.8333	1.4005	1.3750	.9166	.7002	.6875	.6111	.5500	.4583	.4400	.3666	44
45	2.8125	2.2500	1.8750	1.4323	1.4062	.9375	.7161	.7031	.6250	.5625	.4687	.4500	.3750	45
46	2.8750	2.3000	1.9166	1.4642	1.4375	.9583	.7321	.7187	.6388	.5750	.4791	.4600	.3833	46
47	2.9375	2.3500	1.9583	1.4960	1.4687	.9791	.7480	.7343	.6527	.5875	.4895	.4700	.3916	47
48	3.0000	2.4000	2.0000	1.5278	1.5000	1.0000	.7639	.7500	.6666	.6000	.5000	.4800	.4000	48
49	3.0625	2.4500	2.0416	1.5597	1.5312	1.0208	.7798	.7656	.6805	.6125	.5104	.4900	.4083	49
50	3.1250	2.5000	2.0833	1.5915	1.5625	1.0416	.7957	.7812	.6944	.6250	.5208	.5000	.4166	50
51	3.1875	2.5500	2.1250	1.6233	1.5937	1.0625	.8116	.7968	.7083	.6375	.5312	.5100	.4250	51
52	3.2500	2.6000	2.1666	1.6552	1.6250	1.0833	.8276	.8125	.7222	.6500	.5416	.5200	.4333	52
53	3.3125	2.6500	2.2083	1.6870	1.6562	1.1041	.8435	.8281	.7361	.6625	.5520	.5300	.4416	53



# Table of Pitch Diameters

## 54 to 101 Teeth

To find Outside Diameter add 2 teeth.

Theoretical P.D.s only. All gears cut to AGMA Standards.

N = Number of Teeth Applies to Spur & Bevel Gears Only - Not to Helical Gears.

N	DIAMETRAL PITCH												N	
	16	20	24	1/10	32	48	1/20	64	72	80	96	100		120
54	3.3750	2.7000	2.2500	1.7188	1.6875	1.1250	.8594	.8437	.7500	.6750	.5625	.5400	.4500	54
55	3.4375	2.7500	2.2916	1.7507	1.7187	1.1458	.8593	.8593	.7638	.6875	.5729	.5500	.4583	55
56	3.5000	2.8000	2.3333	1.7825	1.7500	1.1666	.8912	.8750	.7777	.7000	.5833	.5600	.4666	56
57	3.5625	2.8500	2.3750	1.8143	1.7812	1.1875	.9071	.8906	.7916	.7125	.5937	.5700	.4750	57
58	3.6250	2.9000	2.4166	1.8461	1.8125	1.2083	.9230	.9062	.8055	.7250	.6041	.5800	.4833	58
59	3.6875	2.9500	2.4583	1.8780	1.8437	1.2291	.9390	.9218	.8194	.7375	.6145	.5900	.4916	59
60	3.7500	3.0000	2.5000	1.9098	1.8750	1.2500	.9549	.9375	.8333	.7500	.6250	.6000	.5000	60
61	3.8125	3.0500	2.5416	1.9416	1.9062	1.2708	.9708	.9531	.8472	.7625	.6354	.6100	.5083	61
62	3.8750	3.1000	2.5833	1.9735	1.9375	1.2916	.9867	.9687	.8611	.7750	.6458	.6200	.5166	62
63	3.9375	3.1500	2.6250	2.0053	1.9687	1.3125	1.0026	.9843	.8750	.7875	.6562	.6300	.5250	63
64	4.0000	3.2000	2.6666	2.0371	2.0000	1.3333	1.0185	1.0000	.8888	.8000	.6666	.6400	.5333	64
65	4.0625	3.2500	2.7083	2.0690	2.0312	1.3541	1.0345	1.0156	.9027	.8125	.6770	.6500	.5416	65
66	4.1250	3.3000	2.7500	2.1008	2.0625	1.3750	1.0504	1.0312	.9166	.8250	.6875	.6600	.5500	66
67	4.1875	3.3500	2.7916	2.1326	2.0937	1.3958	1.0663	1.0468	.9305	.8375	.6979	.6700	.5583	67
68	4.2500	3.4000	2.8333	2.1645	2.1250	1.4166	1.0822	1.0625	.9444	.8500	.7083	.6800	.5666	68
69	4.3125	3.4500	2.8750	2.1963	2.1562	1.4375	1.0981	1.0781	.9583	.8625	.7187	.6900	.5750	69
70	4.3750	3.5000	2.9166	2.2281	2.1875	1.4583	1.1140	1.0937	.9722	.8750	.7291	.7000	.5833	70
71	4.4375	3.5500	2.9583	2.2600	2.2187	1.4791	1.1300	1.1093	.9861	.8875	.7395	.7100	.5916	71
72	4.5000	3.6000	3.0000	2.2918	2.2500	1.5000	1.1459	1.1250	1.0000	.9000	.7500	.7200	.6000	72
73	4.5625	3.6500	3.0416	2.3236	2.2812	1.5208	1.1618	1.1406	1.0138	.9125	.7604	.7300	.6083	73
74	4.6250	3.7000	3.0833	2.3554	2.3125	1.5416	1.1777	1.1562	1.0277	.9250	.7708	.7400	.6166	74
75	4.6875	3.7500	3.1250	2.3873	2.3437	1.5625	1.1936	1.1718	1.0416	.9375	.7812	.7500	.6250	75
76	4.7500	3.8000	3.1666	2.4191	2.3750	1.5833	1.2095	1.1875	1.0555	.9500	.7916	.7600	.6333	76
77	4.8125	3.8500	3.2083	2.4509	2.4062	1.6041	1.2254	1.2031	1.0694	.9625	.8020	.7700	.6416	77
78	4.8750	3.9000	3.2500	2.4828	2.4375	1.6250	1.2414	1.2187	1.0833	.9750	.8125	.7800	.6500	78
79	4.9375	3.9500	3.2916	2.5146	2.4687	1.6458	1.2573	1.2343	1.0972	.9875	.8229	.7900	.6583	79
80	5.0000	4.0000	3.3333	2.5464	2.5000	1.6666	1.2732	1.2500	1.1111	1.0000	.8333	.8000	.6666	80
81	5.0625	4.0500	3.3750	2.5783	2.5312	1.6875	1.2891	1.2656	1.1250	1.0125	.8437	.8100	.6750	81
82	5.1250	4.1000	3.4166	2.6101	2.5625	1.7083	1.3050	1.2812	1.1388	1.0250	.8541	.8200	.6833	82
83	5.1875	4.1500	3.4583	2.6419	2.5937	1.7291	1.3209	1.2968	1.1527	1.0375	.8645	.8300	.6916	83
84	5.2500	4.2000	3.5000	2.6738	2.6250	1.7500	1.3369	1.3125	1.1666	1.0500	.8750	.8400	.7000	84
85	5.3125	4.2500	3.5416	2.7056	2.6562	1.7708	1.3528	1.3281	1.1805	1.0625	.8854	.8500	.7083	85
86	5.3750	4.3000	3.5833	2.7374	2.6875	1.7916	1.3687	1.3437	1.1944	1.0750	.8958	.8600	.7166	86
87	5.4375	4.3500	3.6250	2.7692	2.7187	1.8125	1.3846	1.3593	1.2083	1.0875	.9062	.8700	.7250	87
88	5.5000	4.4000	3.6666	2.8011	2.7500	1.8333	1.4005	1.3750	1.2222	1.1000	.9166	.8800	.7333	88
89	5.5625	4.4500	3.7083	2.8329	2.7812	1.8541	1.4164	1.3906	1.2361	1.1125	.9270	.8900	.7416	89
90	5.6250	4.5000	3.7500	2.8647	2.8125	1.8750	1.4323	1.4062	1.2500	1.1250	.9375	.9000	.7500	90
91	5.6875	4.5500	3.7916	2.8966	2.8437	1.8958	1.4483	1.4218	1.2638	1.1375	.9479	.9100	.7583	91
92	5.7500	4.6000	3.8333	2.9284	2.8750	1.9166	1.4642	1.4375	1.2777	1.1500	.9583	.9200	.7666	92
93	5.8125	4.6500	3.8750	2.9602	2.9062	1.9375	1.4801	1.4531	1.2916	1.1625	.9687	.9300	.7750	93
94	5.8750	4.7000	3.9166	2.9921	2.9375	1.9583	1.4960	1.4687	1.3055	1.1750	.9791	.9400	.7833	94
95	5.9375	4.7500	3.9583	3.0239	2.9687	1.9791	1.5119	1.4843	1.3194	1.1875	.9895	.9500	.7916	95
96	6.0000	4.8000	4.0000	3.0557	3.0000	2.0000	1.5278	1.5000	1.3333	1.2000	1.0000	.9600	.8000	96
97	6.0625	4.8500	4.0416	3.0876	3.0312	2.0208	1.5438	1.5156	1.3472	1.2125	1.0104	.9700	.8083	97
98	6.1250	4.9000	4.0833	3.1194	3.0625	2.0416	1.5597	1.5312	1.3611	1.2250	1.0208	.9800	.8166	98
99	6.1875	4.9500	4.1250	3.1512	3.0937	2.0625	1.5756	1.5468	1.3750	1.2375	1.0312	.9900	.8250	99
100	6.2500	5.0000	4.1666	3.1830	3.1250	2.0833	1.5915	1.5625	1.3888	1.2500	1.0416	1.0000	.8333	100
101	6.3125	5.0500	4.2083	3.2149	3.1562	2.1041	1.6074	1.5781	1.4027	1.2625	1.0520	1.0100	.8416	101

# Table of Pitch Diameters

## 102 to 149 Teeth

To find Outside Diameter add 2 teeth.  
Theoretical P.D.s only. All gears cut to AGMA Standards.

N = Number of Teeth Applies to Spur & Bevel Gears Only - Not to Helical Gears.

N	DIAMETRAL PITCH												N	
	16	20	24	1/10	32	48	1/20	64	72	80	96	100		120
102	6.3750	5.1000	4.2500	3.2467	3.1875	2.1250	1.6233	1.5937	1.4166	1.2750	1.0625	1.0200	.8500	102
103	6.4375	5.1500	4.2916	3.2785	3.2187	2.1458	1.6392	1.6093	1.4305	1.2875	1.0729	1.0300	.8583	103
104	6.5000	5.2000	4.3333	3.3104	3.2500	2.1666	1.6552	1.6250	1.4444	1.3000	1.0833	1.0400	.8666	104
105	6.5625	5.2500	4.3750	3.3422	3.2812	2.1875	1.6711	1.6406	1.4583	1.3125	1.0937	1.0500	.8750	105
106	6.6250	5.3000	4.4166	3.3740	3.3125	2.2083	1.6870	1.6562	1.4722	1.3250	1.1041	1.0600	.8833	106
107	6.6875	5.3500	4.4583	3.4059	3.3437	2.2291	1.7029	1.6718	1.4861	1.3375	1.1145	1.0700	.8916	107
108	6.7500	5.4000	4.5000	3.4377	3.3750	2.2500	1.7188	1.6875	1.5000	1.3500	1.1250	1.0800	.9000	108
109	6.8125	5.4500	4.5416	3.4695	3.4062	2.2708	1.7347	1.7031	1.5138	1.3625	1.1354	1.0900	.9083	109
110	6.8750	5.5000	4.5833	3.5014	3.4375	2.2916	1.7507	1.7187	1.5277	1.3750	1.1458	1.1000	.9166	110
111	6.9375	5.5500	4.6250	3.5332	3.4687	2.3125	1.7666	1.7343	1.5416	1.3875	1.1562	1.1100	.9250	111
112	7.0000	5.6000	4.6666	3.5650	3.5000	2.3333	1.7825	1.7500	1.5555	1.4000	1.1666	1.1200	.9333	112
113	7.0625	5.6500	4.7083	3.5969	3.5312	2.3541	1.7984	1.7656	1.5694	1.4125	1.1770	1.1300	.9416	113
114	7.1250	5.7000	4.7500	3.6287	3.5625	2.3750	1.8143	1.7812	1.5833	1.4250	1.1875	1.1400	.9500	114
115	7.1875	5.7500	4.7916	3.6605	3.5937	2.3958	1.8302	1.7968	1.5972	1.4375	1.1979	1.1500	.9583	115
116	7.2500	5.8000	4.8333	3.6923	3.6250	2.4166	1.8461	1.8125	1.6111	1.4500	1.2083	1.1600	.9666	116
117	7.3125	5.8500	4.8750	3.7242	3.6562	2.4375	1.8621	1.8281	1.6250	1.4625	1.2187	1.1700	.9750	117
118	7.3750	5.9000	4.9166	3.7560	3.6875	2.4583	1.8780	1.8437	1.6388	1.4750	1.2291	1.1800	.9833	118
119	7.4375	5.9500	4.9583	3.7878	3.7187	2.4791	1.8939	1.8593	1.6527	1.4875	1.2395	1.1900	.9916	119
120	7.5000	6.0000	5.0000	3.8197	3.7500	2.5000	1.9098	1.8750	1.6666	1.5000	1.2500	1.2000	1.0000	120
121	7.5625	6.0500	5.0416	3.8515	3.7812	2.5208	1.9257	1.8906	1.6805	1.5125	1.2604	1.2100	1.0083	121
122	7.6250	6.1000	5.0833	3.8833	3.8125	2.5416	1.9416	1.9062	1.6944	1.5250	1.2708	1.2200	1.0166	122
123	7.6875	6.1500	5.1250	3.9152	3.8437	2.5625	1.9576	1.9218	1.7083	1.5375	1.2812	1.2300	1.0250	123
124	7.7500	6.2000	5.1666	3.9470	3.8750	2.5833	1.9735	1.9375	1.7222	1.5500	1.2916	1.2400	1.0333	124
125	7.8125	6.2500	5.2083	3.9788	3.9062	2.6041	1.9894	1.9531	1.7361	1.5625	1.3020	1.2500	1.0416	125
126	7.8750	6.3000	5.2500	4.0107	3.9375	2.6250	2.0053	1.9687	1.7500	1.5750	1.3125	1.2600	1.0500	126
127	7.9375	6.3500	5.2916	4.0425	3.9687	2.6458	2.0212	1.9843	1.7638	1.5875	1.3229	1.2700	1.0583	127
128	8.0000	6.4000	5.3333	4.0743	4.0000	2.6666	2.0371	2.0000	1.7777	1.6000	1.3333	1.2800	1.0666	128
129	8.0625	6.4500	5.3750	4.1061	4.0312	2.6875	2.0530	2.0156	1.7916	1.6125	1.3437	1.2900	1.0750	129
130	8.1250	6.5000	5.4166	4.1380	4.0625	2.7083	2.0690	2.0312	1.8055	1.6250	1.3541	1.3000	1.0833	130
131	8.1875	6.5500	5.4583	4.1698	4.0937	2.7291	2.0849	2.0468	1.8194	1.6375	1.3645	1.3100	1.0916	131
132	8.2500	6.6000	5.5000	4.2016	4.1250	2.7500	2.1008	2.0625	1.8333	1.6500	1.3750	1.3200	1.1000	132
133	8.3125	6.6500	5.5416	4.2335	4.1562	2.7708	2.1167	2.0781	1.8472	1.6625	1.3854	1.3300	1.1083	133
134	8.3750	6.7000	5.5833	4.2653	4.1875	2.7916	2.1326	2.0937	1.8611	1.6750	1.3958	1.3400	1.1166	134
135	8.4375	6.7500	5.6250	4.2971	4.2187	2.8125	2.1485	2.1093	1.8750	1.6875	1.4062	1.3500	1.1250	135
136	8.5000	6.8000	5.6666	4.3290	4.2500	2.8333	2.1645	2.1250	1.8888	1.7000	1.4166	1.3600	1.1333	136
137	8.5625	6.8500	5.7083	4.3608	4.2812	2.8541	2.1804	2.1406	1.9027	1.7125	1.4270	1.3700	1.1416	137
138	8.6250	6.9000	5.7500	4.3926	4.3125	2.8750	2.1963	2.1562	1.9166	1.7250	1.4375	1.3800	1.1500	138
139	8.6875	6.9500	5.7916	4.4245	4.3437	2.8958	2.2122	2.1718	1.9305	1.7375	1.4479	1.3900	1.1583	139
140	8.7500	7.0000	5.8333	4.4563	4.3750	2.9166	2.2281	2.1875	1.9444	1.7500	1.4583	1.4000	1.1666	140
141	8.8125	7.0500	5.8750	4.4881	4.4062	2.9375	2.2440	2.2031	1.9583	1.7625	1.4687	1.4100	1.1750	141
142	8.8750	7.1000	5.9166	4.5200	4.4375	2.9583	2.2600	2.2187	1.9722	1.7750	1.4791	1.4200	1.1833	142
143	8.9375	7.1500	5.9583	4.5518	4.4687	2.9791	2.2759	2.2343	1.9861	1.7875	1.4895	1.4300	1.1916	143
144	9.0000	7.2000	6.0000	4.5836	4.5000	3.0000	2.2918	2.2500	2.0000	1.8000	1.5000	1.4400	1.2000	144
145	9.0625	7.2500	6.0416	4.6154	4.5312	3.0208	2.3077	2.2656	2.0138	1.8125	1.5104	1.4500	1.2083	145
146	9.1250	7.3000	6.0833	4.6473	4.5625	3.0416	2.3236	2.2812	2.0277	1.8250	1.5208	1.4600	1.2166	146
147	9.1875	7.3500	6.1250	4.6791	4.5937	3.0625	2.3395	2.2968	2.0416	1.8375	1.5312	1.4700	1.2250	147
148	9.2500	7.4000	6.1666	4.7109	4.6250	3.0833	2.3554	2.3125	2.0555	1.8500	1.5416	1.4800	1.2333	148
149	9.3125	7.4500	6.2083	4.7428	4.6562	3.1041	2.3714	2.3281	2.0694	1.8625	1.5520	1.4900	1.2416	149



# Table of Pitch Diameters

## 150 to 197 Teeth

To find Outside Diameter add 2 teeth.  
Theoretical P.D.s only. All gears cut to AGMA Standards.

N = Number of Teeth Applies to Spur & Bevel Gears Only - Not to Helical Gears.

N	DIAMETRAL PITCH												N	
	16	20	24	1/10	32	48	1/20	64	72	80	96	100		120
150	9.3750	7.5000	6.2500	4.7746	4.6875	3.1250	2.3873	2.3437	2.0833	1.8750	1.5625	1.5000	1.2500	150
151	9.4375	7.5500	6.2916	4.8064	4.7187	3.1458	2.4032	2.3593	2.0972	1.8875	1.5729	1.5100	1.2583	151
152	9.5000	7.6000	6.3333	4.8383	4.7500	3.1666	2.4191	2.3750	2.1111	1.9000	1.5833	1.5200	1.2666	152
153	9.5625	7.6500	6.3750	4.8701	4.7812	3.1875	2.4350	2.3906	2.1250	1.9125	1.5937	1.5300	1.2750	153
154	9.6250	7.7000	6.4166	4.9019	4.8125	3.2083	2.4509	2.4062	2.1388	1.9250	1.6041	1.5400	1.2833	154
155	9.6875	7.7500	6.4583	4.9338	4.8437	3.2291	2.4669	2.4218	2.1527	1.9375	1.6145	1.5500	1.2916	155
156	9.7500	7.8000	6.5000	4.9656	4.8750	3.2500	2.4828	2.4375	2.1666	1.9500	1.6250	1.5600	1.3000	156
157	9.8125	7.8500	6.5416	4.9974	4.9062	3.2708	2.4987	2.4531	2.1805	1.9625	1.6354	1.5700	1.3083	157
158	9.8750	7.9000	6.5833	5.0292	4.9375	3.2916	2.5146	2.4687	2.1944	1.9750	1.6458	1.5800	1.3166	158
159	9.9375	7.9500	6.6250	5.0611	4.9687	3.3125	2.5305	2.4843	2.2083	1.9875	1.6562	1.5900	1.3250	159
160	10.0000	8.0000	6.6666	5.0929	5.0000	3.3333	2.5464	2.5000	2.2222	2.0000	1.6666	1.6000	1.3333	160
161	10.0625	8.0500	6.7083	5.1247	5.0312	3.3541	2.5623	2.5156	2.2361	2.0125	1.6770	1.6100	1.3416	161
162	10.1250	8.1000	6.7500	5.1566	5.0625	3.3750	2.5783	2.5312	2.2500	2.0250	1.6875	1.6200	1.3500	162
163	10.1875	8.1500	6.7916	5.1884	5.0937	3.3958	2.5942	2.5468	2.2638	2.0375	1.6979	1.6300	1.3583	163
164	10.2500	8.2000	6.8333	5.2202	5.1250	3.4166	2.6101	2.5625	2.2777	2.0500	1.7083	1.6400	1.3666	164
165	10.3125	8.2500	6.8750	5.2521	5.1562	3.4375	2.6260	2.5781	2.2916	2.0625	1.7187	1.6500	1.3750	165
166	10.3750	8.3000	6.9166	5.2839	5.1875	3.4583	2.6419	2.5937	2.3055	2.0750	1.7291	1.6600	1.3833	166
167	10.4375	8.3500	6.9583	5.3157	5.2187	3.4791	2.6578	2.6093	2.3194	2.0875	1.7395	1.6700	1.3916	167
168	10.5000	8.4000	7.0000	5.3476	5.2500	3.5000	2.6738	2.6250	2.3333	2.1000	1.7500	1.6800	1.4000	168
169	10.5625	8.4500	7.0416	5.3794	5.2812	3.5208	2.6897	2.6406	2.3472	2.1125	1.7604	1.6900	1.4083	169
170	10.6250	8.5000	7.0833	5.4112	5.3125	3.5416	2.7056	2.6562	2.3611	2.1250	1.7708	1.7000	1.4166	170
171	10.6875	8.5500	7.1250	5.4430	5.3437	3.5625	2.7215	2.6718	2.3750	2.1375	1.7812	1.7100	1.4250	171
172	10.7500	8.6000	7.1666	5.4749	5.3750	3.5833	2.7374	2.6875	2.3888	2.1500	1.7916	1.7200	1.4333	172
173	10.8125	8.6500	7.2083	5.5067	5.4062	3.6041	2.7533	2.7031	2.4027	2.1625	1.8020	1.7300	1.4416	173
174	10.8750	8.7000	7.2500	5.5385	5.4375	3.6250	2.7692	2.7187	2.4166	2.1750	1.8125	1.7400	1.4500	174
175	10.9375	8.7500	7.2916	5.5704	5.4687	3.6458	2.7852	2.7343	2.4305	2.1875	1.8229	1.7500	1.4583	175
176	11.0000	8.8000	7.3333	5.6022	5.5000	3.6666	2.8011	2.7500	2.4444	2.2000	1.8333	1.7600	1.4666	176
177	11.0625	8.8500	7.3750	5.6340	5.5312	3.6875	2.8170	2.7656	2.4583	2.2125	1.8437	1.7700	1.4750	177
178	11.1250	8.9000	7.4166	5.6659	5.5625	3.7083	2.8329	2.7812	2.4722	2.2250	1.8541	1.7800	1.4833	178
179	11.1875	8.9500	7.4583	5.6977	5.5937	3.7291	2.8488	2.7968	2.4861	2.2375	1.8645	1.7900	1.4916	179
180	11.2500	9.0000	7.5000	5.7295	5.6250	3.7500	2.8647	2.8125	2.5000	2.2500	1.8750	1.8000	1.5000	180
181	11.3125	9.0500	7.5416	5.7614	5.6562	3.7708	2.8807	2.8281	2.5138	2.2625	1.8854	1.8100	1.5083	181
182	11.3750	9.1000	7.5833	5.7932	5.6875	3.7916	2.8966	2.8437	2.5277	2.2750	1.8958	1.8200	1.5166	182
183	11.4375	9.1500	7.6250	5.8250	5.7187	3.8125	2.9125	2.8593	2.5416	2.2875	1.9062	1.8300	1.5250	183
184	11.5000	9.2000	7.6666	5.8569	5.7500	3.8333	2.9284	2.8750	2.5555	2.3000	1.9166	1.8400	1.5333	184
185	11.5625	9.2500	7.7083	5.8887	5.7812	3.8541	2.9443	2.8906	2.5694	2.3125	1.9270	1.8500	1.5416	185
186	11.6250	9.3000	7.7500	5.9205	5.8125	3.8750	2.9602	2.9062	2.5833	2.3250	1.9375	1.8600	1.5500	186
187	11.6875	9.3500	7.7916	5.9523	5.8437	3.8958	2.9761	2.9218	2.5972	2.3375	1.9479	1.8700	1.5583	187
188	11.7500	9.4000	7.8333	5.9842	5.8750	3.9166	2.9921	2.9375	2.6111	2.3500	1.9583	1.8800	1.5666	188
189	11.8125	9.4500	7.8750	6.0160	5.9062	3.9375	3.0080	2.9531	2.6250	2.3625	1.9687	1.8900	1.5750	189
190	11.8750	9.5000	7.9166	6.0478	5.9375	3.9583	3.0239	2.9687	2.6388	2.3750	1.9791	1.9000	1.5833	190
191	11.9375	9.5500	7.9583	6.0797	5.9687	3.9791	3.0398	2.9843	2.6527	2.3875	1.9895	1.9100	1.5916	191
192	12.0000	9.6000	8.0000	6.1115	6.0000	4.0000	3.0557	3.0000	2.6666	2.4000	2.0000	1.9200	1.6000	192
193	12.0625	9.6500	8.0416	6.1433	6.0312	4.0208	3.0716	3.0156	2.6805	2.4125	2.0104	1.9300	1.6083	193
194	12.1250	9.7000	8.0833	6.1752	6.0625	4.0416	3.0876	3.0312	2.6944	2.4250	2.0208	1.9400	1.6166	194
195	12.1875	9.7500	8.1250	6.2070	6.0937	4.0625	3.1035	3.0468	2.7083	2.4375	2.0312	1.9500	1.6250	195
196	12.2500	9.8000	8.1666	6.2388	6.1250	4.0833	3.1194	3.0625	2.7222	2.4500	2.0416	1.9600	1.6333	196
197	12.3125	9.8500	8.2083	6.2707	6.1562	4.1041	3.1353	3.0781	2.7361	2.4625	2.0520	1.9700	1.6416	197