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Tafel der Jacobischen elliptischen Funktion $\varphi = \mathrm{am}\left(\frac{m}{n} K\right)$

von

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Die Jacobischen elliptischen Funktionen:

$$\begin{aligned}
&\text{„Amplitudo“} && \operatorname{am} u = \operatorname{am}(u; k) = \varphi,\\
&\text{„Sinus amplitudinis“} && \operatorname{sn} u = \operatorname{sn}(u; k) = \sin\varphi,\\
&\text{„Cosinus amplitudinis“} && \operatorname{cn} u = \operatorname{cn}(u; k) = \cos\varphi,\\
&\text{„Delta amplitudinis“} && \operatorname{dn} u = \operatorname{dn}(u; k) = +\sqrt{1 - k^2 \sin^2\varphi}
\end{aligned}$$

haben seit etwa 20 Jahren beim Entwurf linearer Wechselstromschaltungen eine bemerkenswerte Verwendung gefunden. Die Arbeit von H. Piloty[1] hat die mathematischen Zusammenhänge herausgestellt. Die praktische Benutzung der Methoden in der Technik setzt im allgemeinen voraus, daß die interessierenden Funktionen tabuliert vorliegen. Hierzu ist die vorliegende Arbeit ein Beitrag.

Wurden bislang spezielle Funktionswerte mit größerer Stellenzahl benötigt – und wollte man diese nicht mühsam aus den Reihenentwicklungen direkt berechnen –, so stand nur die bedeutende Tafel von A. M. Legendre[2] aus dem Jahre 1816 zur Verfügung, in der das „Unvollständige elliptische Integral erster Gattung“ $u = F(\Theta; \varphi)$ mit 10 bzw. 9 Dezimalstellen nach dem Komma tabuliert ist. Es konnte so zu gegebenem Modul $k = \sin\Theta$ – wobei Θ zweckmäßig ganz-zahlig zwischen 0° und 90° gewählt wird – und zu vorgegebenem Werte des elliptischen Integrals u durch inverse Interpolation die Amplitude φ mit großer Genauigkeit gewonnen werden.

Eine wesentliche Bereicherung brachte die 1947 erschienene Tafel von G. W. und R. M. Spenceley,[3] in der alle obenerwähnten Jacobischen Funktionen für $\Theta = 1^\circ\,(1^\circ)\,89^\circ$ und für ganzzahlige Vielfache des in 90 Teile geteilten „Vollständigen Integrals erster Gattung“ K, d. h. für

$$u = r \cdot \frac{K}{90} \quad (r = 0\,(1)\,90),$$

mit 12 Dezimalstellen nach dem Komma tabuliert sind.

Es zeigt sich, daß diese Art der Tabulierung den von Piloty aufgezeigten Anwendungen in der Technik sehr entgegenkommt, da hier die elliptischen Funktionen für ganzzahlige Vielfache von K/n, d. h. für

$$u = m \cdot \frac{K}{n}$$

benötigt werden. Soweit bisher übersehen werden kann, dürften für n die Zahlen $2, 3, \ldots, 12$ von praktischer Bedeutung sein, während für m die Zahlen $1, 2, \ldots, (n-1)$ vorkommen. In der Tafel von Spenceley liegen die Fälle $n = 2, 3, 5, 6, 9, 10$ vollständig tabuliert vor. Ergänzende Berechnungen sind dagegen für $n = 4, 7, 8, 11$ und 12 erforderlich.

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[1] H. Piloty, Zolotareff'sche rationale Funktionen. Erscheint Anfang 1954 in der Zeitschrift für angewandte Mathematik und Mechanik.

[2] A. M. Legendre, Exercices de Calcul intégral sur divers ordres de transcendantes et sur les quadratures, t. III, Méthodes diverses pour la construction des tables elliptiques. Paris 1816.

[3] G. W. and R. M. Spenceley, Smithsonian Elliptic Functions Tables, Washington 1947.

Der Verfasser hatte bereits früher, bevor er von der Spenceleyschen Tafel Kenntnis erhielt, aus der Legendre-Tafel u. a. eine Tafel der Jacobischen Funktion

$$\varphi = \operatorname{am}(u; k) = \operatorname{am}\left(m \cdot \frac{K}{n}; \sin\Theta\right) \text{ für } \Theta = 0^\circ\,(1^\circ)\,90^\circ$$

und für die interessierenden Fälle $n = 2, 3, \ldots, 12$ hergestellt, wobei φ im Gradmaß angegeben war. Diese Tafel wurde jetzt für $n = 2, 3, 5, 6, 9$ und 10 mit Hilfe der Spenceley-Tafel, die φ im Bogenmaß enthält, kontrolliert. Durch Interpolation in der Spenceley-Tafel wurde ferner die Exaktheit für die Fälle $n = 4, 7, 8, 11$ und 12 sichergestellt. Es ist daher zu hoffen, daß die hier abgedruckte Tafel der Funktion φ nur Maximalfehler von $0^\circ{,}0005$ aufweist. Zur Erleichterung der Interpolation bei beliebigem Modul k – und für diesen Fall ist die Tafel in erster Linie gedacht – wurden die ersten Differenzen Δ hinzugefügt.

Hat man aus der vorliegenden Tafel φ gefunden, so eignet sich für die weitere Berechnung von sn u und cn u (und damit auch von dn u) besonders die Tafel von J. Peters.[1] In ihr ist die sin- und cos-Funktion von Tausendstel zu Tausendstel des Grades siebenstellig direkt angegeben. Da der Maximalfehler für φ $0^\circ{,}0005$ beträgt, ist der Maximalfehler für sn u und cn u $0{,}000008_3$.

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[1] J. Peters, Siebenstellige Werte der trigonometrischen Funktionen von Tausendstel zu Tausendstel des Grades, Berlin 1918.

Tafel der Jacobischen
elliptischen Funktion $\varphi = \operatorname{am}\left(\frac{m}{n}K\right)$

$n=2$			$n=12$									
Θ	$\mathrm{am}(\frac{1}{12}K)$	Δ	$\mathrm{am}(\frac{1}{12}K)$	Δ	$\mathrm{am}(\frac{2}{12}K)$	Δ	$\mathrm{am}(\frac{3}{12}K)$	Δ	$\mathrm{am}(\frac{4}{12}K)$	Δ	$\mathrm{am}(\frac{5}{12}K)$	Δ
0	45.000	2	7.500	1	15.000	1	22.500	2	30.000	2	37.500	2
1	45.002	7	7.501	1	15.001	3	22.502	4	30.002	6	37.502	6
2	45.009	11	7.502	3	15.004	6	22.506	8	30.008	9	37.508	11
3	45.020	15	7.505	4	15.010	7	22.514	11	30.017	13	37.519	15
4	45.035	20	7.509	5	15.017	10	22.525	14	30.030	17	37.534	19
5	45.055	24	7.514	6	15.027	12	22.539	17	30.047	21	37.553	23
6	45.079	28	7.520	8	15.039	15	22.556	20	30.068	25	37.576	28
7	45.107	33	7.528	8	15.054	16	22.576	23	30.093	28	37.604	31
8	45.140	37	7.536	10	15.070	19	22.599	27	30.121	33	37.635	36
9	45.177	42	7.546	11	15.089	21	22.626	29	30.154	36	37.671	41
10	45.219	47	7.557	12	15.110	23	22.655	33	30.190	40	37.712	45
11	45.266	50	7.569	13	15.133	26	22.688	36	30.230	44	37.757	49
12	45.316	56	7.582	15	15.159	27	22.724	40	30.274	49	37.806	54
13	45.372	60	7.597	15	15.186	31	22.764	42	30.323	52	37.860	58
14	45.432	65	7.612	17	15.217	32	22.806	46	30.375	56	37.918	62
15	45.497	69	7.629	18	15.249	35	22.852	50	30.431	60	37.980	67
16	45.566	74	7.647	20	15.284	38	22.902	52	30.491	65	38.047	72
17	45.640	79	7.667	20	15.322	39	22.954	56	30.556	68	38.119	76
18	45.719	83	7.687	22	15.361	43	23.010	60	30.624	73	38.195	81
19	45.802	89	7.709	23	15.404	44	23.070	63	30.697	78	38.276	86
20	45.891	93	7.732	25	15.448	48	23.133	67	30.775	81	38.362	91
21	45.984	99	7.757	26	15.496	50	23.200	71	30.856	86	38.453	95
22	46.083	103	7.783	27	15.546	52	23.271	74	30.942	91	38.548	101
23	46.186	109	7.810	29	15.598	56	23.345	78	31.033	95	38.649	105
24	46.295	114	7.839	30	15.654	58	23.423	82	31.128	99	38.754	111
25	46.409	119	7.869	32	15.712	61	23.505	86	31.227	105	38.865	116
26	46.528	124	7.901	33	15.773	64	23.591	89	31.332	109	38.981	121
27	46.652	130	7.934	34	15.837	66	23.680	94	31.441	114	39.102	126
28	46.782	135	7.968	36	15.903	70	23.774	98	31.555	120	39.228	132
29	46.917	142	8.004	38	15.973	73	23.872	102	31.675	124	39.360	138
30	47.059	146	8.042	40	16.046	76	23.974	107	31.799	130	39.498	143
31	47.205	153	8.082	41	16.122	79	24.081	111	31.929	135	39.641	149
32	47.358	159	8.123	43	16.201	82	24.192	116	32.064	140	39.790	155
33	47.517	165	8.166	44	16.283	86	24.308	120	32.204	146	39.945	161
34	47.682	171	8.210	47	16.369	89	24.428	126	32.350	152	40.106	167
35	47.853	177	8.257	48	16.458	93	24.554	130	32.502	157	40.273	174
36	48.030	184	8.305	50	16.551	96	24.684	135	32.659	164	40.447	180
37	48.214	191	8.355	52	16.647	101	24.819	140	32.823	170	40.627	187
38	48.405	197	8.407	55	16.748	104	24.959	146	32.993	177	40.814	194
39	48.602	204	8.462	56	16.852	108	25.105	152	33.170	182	41.008	201
40	48.806	212	8.518	59	16.960	113	25.257	157	33.352	190	41.209	208
41	49.018	219	8.577	61	17.073	116	25.414	163	33.542	197	41.417	215
42	49.237	226	8.638	63	17.189	122	25.577	169	33.739	204	41.632	223
43	49.463	234	8.701	66	17.311	126	25.746	176	33.943	211	41.855	231
44	49.697	243	8.767	68	17.437	130	25.922	182	34.154	219	42.086	240
45	49.940	250	8.835	71	17.567	136	26.104	189	34.373	227	42.326	247

$n = 12$

Θ	am $(\frac{6}{12}K)$	Δ	am $(\frac{7}{12}K)$	Δ	am $(\frac{8}{12}K)$	Δ	am $(\frac{9}{12}K)$	Δ	am $(\frac{10}{12}K)$	Δ	am $(\frac{11}{12}K)$	Δ
0	45.000	2	52.500	2	60.000	2	67.500	2	75.000	1	82.500	1
1	45.002	7	52.502	6	60.002	6	67.502	4	75.001	3	82.501	1
2	45.009	11	52.508	11	60.008	9	67.506	8	75.004	6	82.502	3
3	45.020	15	52.519	15	60.017	13	67.514	11	75.010	7	82.505	4
4	45.035	20	52.534	19	60.030	17	67.525	14	75.017	10	82.509	5
5	45.055	24	52.553	23	60.047	21	67.539	17	75.027	12	82.514	6
6	45.079	28	52.576	27	60.068	25	67.556	20	75.039	15	82.520	8
7	45.107	33	52.603	32	60.093	28	67.576	23	75.054	16	82.528	8
8	45.140	37	52.635	36	60.121	33	67.599	26	75.070	19	82.536	10
9	45.177	42	52.671	41	60.154	36	67.625	30	75.089	20	82.546	11
10	45.219	47	52.712	44	60.190	40	67.655	33	75.109	24	82.557	12
11	45.266	50	52.756	49	60.230	44	67.688	35	75.133	25	82.569	13
12	45.316	56	52.805	54	60.274	48	67.723	39	75.158	27	82.582	14
13	45.372	60	52.859	58	60.322	51	67.762	43	75.185	30	82.596	15
14	45.432	65	52.917	62	60.373	56	67.805	45	75.215	32	82.611	17
15	45.497	69	52.979	67	60.429	60	67.850	49	75.247	35	82.628	18
16	45.566	74	53.046	71	60.489	64	67.899	52	75.282	36	82.646	19
17	45.640	79	53.117	76	60.553	67	67.951	55	75.318	39	82.665	20
18	45.719	83	53.193	81	60.620	72	68.006	59	75.357	42	82.685	21
19	45.802	89	53.274	85	60.692	77	68.065	61	75.399	43	82.706	23
20	45.891	93	53.359	90	60.769	80	68.126	66	75.442	47	82.729	24
21	45.984	99	53.449	94	60.849	84	68.192	69	75.489	48	82.753	25
22	46.083	103	53.543	100	60.933	89	68.261	72	75.537	51	82.778	26
23	46.186	109	53.643	104	61.022	93	68.333	75	75.588	53	82.804	28
24	46.295	114	53.747	109	61.115	97	68.408	79	75.641	56	82.832	28
25	46.409	119	53.856	115	61.212	102	68.487	83	75.697	58	82.860	30
26	46.528	124	53.971	119	61.314	107	68.570	86	75.755	61	82.890	32
27	46.652	130	54.090	124	61.421	110	68.656	90	75.816	63	82.922	32
28	46.782	135	54.214	130	61.531	116	68.746	94	75.879	66	82.954	34
29	46.917	142	54.344	135	61.647	120	68.840	97	75.945	69	82.988	36
30	47.059	146	54.479	141	61.767	125	68.937	102	76.014	71	83.024	36
31	47.205	153	54.620	146	61.892	129	69.039	105	76.085	74	83.060	39
32	47.358	159	54.766	151	62.021	135	69.144	109	76.159	76	83.099	39
33	47.517	165	54.917	158	62.156	140	69.253	112	76.235	79	83.138	41
34	47.682	171	55.075	163	62.296	144	69.365	117	76.314	82	83.179	42
35	47.853	177	55.238	169	62.440	150	69.482	121	76.396	85	83.221	44
36	48.030	184	55.407	175	62.590	155	69.603	126	76.481	88	83.265	45
37	48.214	191	55.582	181	62.745	160	69.729	129	76.569	91	83.310	47
38	48.405	197	55.763	188	62.905	166	69.858	134	76.660	94	83.357	48
39	48.602	204	55.951	194	63.071	172	69.992	138	76.754	96	83.405	50
40	48.806	212	56.145	201	63.243	177	70.130	143	76.850	100	83.455	51
41	49.018	219	56.346	208	63.420	183	70.273	147	76.950	103	83.506	53
42	49.237	226	56.554	214	63.603	189	70.420	152	77.053	106	83.559	55
43	49.463	234	56.768	222	63.792	195	70.572	157	77.159	110	83.614	56
44	49.697	243	56.990	229	63.987	201	70.729	161	77.269	113	83.670	58
45	49.940	250	57.219	236	64.188	208	70.890	167	77.382	116	83.728	60

$n = 2$			$n = 12$									
Θ	$\mathrm{am}(\frac{1}{2}K)$	Δ	$\mathrm{am}(\frac{1}{12}K)$	Δ	$\mathrm{am}(\frac{2}{12}K)$	Δ	$\mathrm{am}(\frac{3}{12}K)$	Δ	$\mathrm{am}(\frac{4}{12}K)$	Δ	$\mathrm{am}(\frac{5}{12}K)$	Δ
		243		68		130		182		219		240
45	49.940	250	8.835	71	17.567	136	26.104	189	34.373	227	42.326	247
46	50.190	259	8.906	74	17.703	141	26.293	196	34.600	235	42.573	256
47	50.449	268	8.980	76	17.844	146	26.489	204	34.835	244	42.829	266
48	50.717	276	9.056	80	17.990	152	26.693	211	35.079	253	43.095	274
49	50.993	286	9.136	82	18.142	158	26.904	219	35.332	262	43.369	285
50	51.279	296	9.218	86	18.300	164	27.123	227	35.594	271	43.654	294
51	51.575	306	9.304	90	18.464	170	27.350	236	35.865	282	43.948	304
52	51.881	316	9.394	93	18.634	177	27.586	245	36.147	291	44.252	316
53	52.197	327	9.487	96	18.811	184	27.831	254	36.438	303	44.568	327
54	52.524	338	9.583	101	18.995	192	28.085	265	36.741	314	44.895	338
55	52.862	349	9.684	105	19.187	199	28.350	275	37.055	326	45.233	351
56	53.211	362	9.789	109	19.386	208	28.625	285	37.381	338	45.584	363
57	53.573	374	9.898	114	19.594	216	28.910	298	37.719	352	45.947	377
58	53.947	387	10.012	119	19.810	225	29.208	309	38.071	365	46.324	390
59	54.334	402	10.131	124	20.035	236	29.517	323	38.436	380	46.714	406
60	54.736	415	10.255	130	20.271	245	29.840	336	38.816	395	47.120	420
61	55.151	431	10.385	136	20.516	257	30.176	350	39.211	411	47.540	437
62	55.582	446	10.521	142	20.773	268	30.526	366	39.622	428	47.977	454
63	56.028	464	10.663	149	21.041	281	30.892	382	40.050	447	48.431	473
64	56.492	480	10.812	156	21.322	294	31.274	400	40.497	465	48.904	491
65	56.972	500	10.968	164	21.616	308	31.674	419	40.962	487	49.395	512
66	57.472	519	11.132	173	21.924	325	32.093	438	41.449	508	49.907	533
67	57.991	540	11.305	182	22.249	341	32.531	460	41.957	532	50.440	557
68	58.531	563	11.487	192	22.590	359	32.991	484	42.489	557	50.997	581
69	59.094	586	11.679	203	22.949	379	33.475	509	43.046	585	51.578	608
70	59.680	612	11.882	216	23.328	401	33.984	537	43.631	614	52.186	636
71	60.292	639	12.098	228	23.729	426	34.521	567	44.245	647	52.822	668
72	60.931	668	12.326	244	24.155	451	35.088	601	44.892	682	53.490	701
73	61.599	701	12.570	260	24.606	481	35.689	637	45.574	721	54.191	737
74	62.300	736	12.830	279	25.087	515	36.326	679	46.295	764	54.928	778
75	63.036	773	13.109	299	25.602	551	37.005	724	47.059	811	55.706	822
76	63.809	816	13.408	324	26.153	594	37.729	777	47.870	865	56.528	871
77	64.625	863	13.732	352	26.747	642	38.506	835	48.735	925	57.399	926
78	65.488	915	14.084	384	27.389	699	39.341	904	49.660	993	58.325	989
79	66.403	975	14.468	423	28.088	766	40.245	983	50.653	1073	59.314	1060
80	67.378	1042	14.891	469	28.854	845	41.228	1077	51.726	1166	60.374	1142
81	68.420	1122	15.360	527	29.699	941	42.305	1190	52.892	1276	61.516	1239
82	69.542	1214	15.887	598	30.640	1063	43.495	1329	54.168	1411	62.755	1354
83	70.756	1328	16.485	691	31.703	1218	44.824	1506	55.579	1578	64.109	1497
84	72.084	1468	17.176	818	32.921	1426	46.330	1739	57.157	1794	65.606	1679
85	73.552	1653	17.994	1001	34.347	1721	48.069	2061	58.951	2088	67.285	1918
86	75.205	1909	18.995	1285	36.068	2171	50.130	2543	61.039	2515	69.203	2261
87	77.114	2304	20.280	1798	38.239	2964	52.673	3361	63.554	3219	71.464	2806
88	79.418	3056	22.078	3028	41.203	4781	56.034	5146	66.773	4679	74.270	3888
89	82.474		25.106		45.984		61.180		71.452		78.158	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 12$

Θ	$\mathrm{am}(\frac{6}{12}K)$	Δ	$\mathrm{am}(\frac{7}{12}K)$	Δ	$\mathrm{am}(\frac{8}{12}K)$	Δ	$\mathrm{am}(\frac{9}{12}K)$	Δ	$\mathrm{am}(\frac{10}{12}K)$	Δ	$\mathrm{am}(\frac{11}{12}K)$	Δ
		243		229		201		161		113		58
45	49.940	250	57.219	236	64.188	208	70.890	167	77.382	116	83.728	60
46	50.190	259	57.455	244	64.396	214	71.057	172	77.498	120	83.788	61
47	50.449	268	57.699	253	64.610	221	71.229	177	77.618	123	83.849	63
48	50.717	276	57.952	260	64.831	228	71.406	182	77.741	127	83.912	65
49	50.993	286	58.212	269	65.059	235	71.588	188	77.868	131	83.977	67
50	51.279	296	58.481	277	65.294	242	71.776	193	77.999	134	84.044	69
51	51.575	306	58.758	287	65.536	250	71.969	200	78.133	139	84.113	71
52	51.881	316	59.045	295	65.786	258	72.169	205	78.272	143	84.184	73
53	52.197	327	59.340	306	66.044	265	72.374	212	78.415	146	84.257	76
54	52.524	338	59.646	315	66.309	274	72.586	218	78.561	152	84.333	77
55	52.862	349	59.961	326	66.583	283	72.804	224	78.713	155	84.410	79
56	53.211	362	60.287	336	66.866	291	73.028	231	78.868	160	84.489	82
57	53.573	374	60.623	347	67.157	301	73.259	239	79.028	165	84.571	84
58	53.947	387	60.970	359	67.458	310	73.498	245	79.193	170	84.655	87
59	54.334	402	61.329	372	67.768	320	73.743	253	79.363	174	84.742	89
60	54.736	415	61.701	383	68.088	331	73.996	261	79.537	180	84.831	92
61	55.151	431	62.084	397	68.419	341	74.257	269	79.717	186	84.923	94
62	55.582	446	62.481	411	68.760	352	74.526	278	79.903	191	85.017	97
63	56.028	464	62.892	425	69.112	364	74.804	286	80.094	197	85.114	100
64	56.492	480	63.317	440	69.476	377	75.090	295	80.291	202	85.214	104
65	56.972	500	63.757	456	69.853	389	75.385	306	80.493	210	85.318	106
66	57.472	519	64.213	473	70.242	402	75.691	315	80.703	216	85.424	110
67	57.991	540	64.686	491	70.644	417	76.006	325	80.919	222	85.534	113
68	58.531	563	65.177	510	71.061	432	76.331	337	81.141	231	85.647	116
69	59.094	586	65.687	530	71.493	448	76.668	349	81.372	238	85.763	121
70	59.680	612	66.217	551	71.941	465	77.017	361	81.610	245	85.884	124
71	60.292	639	66.768	574	72.406	483	77.378	374	81.855	255	86.008	129
72	60.931	668	67.342	598	72.889	502	77.752	388	82.110	264	86.137	133
73	61.599	701	67.940	625	73.391	522	78.140	403	82.374	273	86.270	138
74	62.300	736	68.565	653	73.913	545	78.543	419	82.647	284	86.408	143
75	63.036	773	69.218	685	74.458	568	78.962	436	82.931	294	86.551	148
76	63.809	816	69.903	719	75.026	595	79.398	455	83.225	307	86.699	155
77	64.625	863	70.622	756	75.621	623	79.853	475	83.532	320	86.854	160
78	65.488	915	71.378	797	76.244	654	80.328	498	83.852	333	87.014	167
79	66.403	975	72.175	845	76.898	690	80.826	522	84.185	350	87.181	175
80	67.378	1042	73.020	897	77.588	729	81.348	549	84.535	366	87.356	183
81	68.420	1122	73.917	959	78.317	773	81.897	581	84.901	386	87.539	193
82	69.542	1214	74.876	1029	79.090	826	82.478	616	85.287	408	87.732	203
83	70.756	1328	75.905	1115	79.916	886	83.094	657	85.695	433	87.935	214
84	72.084	1468	77.020	1219	80.802	961	83.751	707	86.128	464	88.149	229
85	73.552	1653	78.239	1354	81.763	1053	84.458	768	86.592	499	88.378	247
86	75.205	1909	79.593	1535	82.816	1177	85.226	848	87.091	547	88.625	267
87	77.114	2304	81.128	1808	83.993	1358	86.074	960	87.638	612	88.892	297
88	79.418	3056	82.936	2306	85.351	1671	87.034	1149	88.250	715	89.189	342
89	82.474		85.242		87.022		88.183		88.965		89.531	
90	90.000		90.000		90.000		90.000		90.000		90.000	

	$n = 3$				$n = 11$							
Θ	$\mathrm{am}(\frac{1}{3}K)$	Δ	$\mathrm{am}(\frac{2}{3}K)$	Δ	$\mathrm{am}(\frac{1}{11}K)$	Δ	$\mathrm{am}(\frac{2}{11}K)$	Δ	$\mathrm{am}(\frac{3}{11}K)$	Δ	$\mathrm{am}(\frac{4}{11}K)$	Δ
0	30.000	2	60.000	2	8.182	0	16.364	1	24.545	2	32.727	2
1	30.002	6	60.002	6	8.182	2	16.365	3	24.547	5	32.729	6
2	30.008	9	60.008	9	8.184	3	16.368	6	24.552	8	32.735	10
3	30.017	13	60.017	13	8.187	5	16.374	9	24.560	12	32.745	14
4	30.030	17	60.030	17	8.192	5	16.383	10	24.572	15	32.759	18
5	30.047	21	60.047	21	8.197	7	16.393	13	24.587	18	32.777	22
6	30.068	25	60.068	25	8.204	8	16.406	16	24.605	21	32.799	26
7	30.093	28	60.093	28	8.212	9	16.422	17	24.626	25	32.825	30
8	30.121	33	60.121	33	8.221	11	16.439	21	24.651	29	32.855	34
9	30.154	36	60.154	36	8.232	12	16.460	22	24.680	31	32.889	38
10	30.190	40	60.190	40	8.244	13	16.482	26	24.711	35	32.927	42
11	30.230	44	60.230	44	8.257	14	16.508	27	24.746	39	32.969	46
12	30.274	49	60.274	48	8.271	16	16.535	30	24.785	42	33.015	51
13	30.323	52	60.322	51	8.287	17	16.565	33	24.827	46	33.066	55
14	30.375	56	60.373	56	8.304	18	16.598	35	24.873	49	33.121	59
15	30.431	60	60.429	60	8.322	20	16.633	38	24.922	53	33.180	63
16	30.491	65	60.489	64	8.342	21	16.671	40	24.975	56	33.243	68
17	30.556	68	60.553	67	8.363	23	16.711	43	25.031	60	33.311	72
18	30.624	73	60.620	72	8.386	23	16.754	46	25.091	64	33.383	76
19	30.697	78	60.692	77	8.409	26	16.800	48	25.155	67	33.459	81
20	30.775	81	60.769	80	8.435	26	16.848	52	25.222	72	33.540	86
21	30.856	86	60.849	84	8.461	29	16.900	54	25.294	75	33.626	90
22	30.942	91	60.933	89	8.490	29	16.954	57	25.369	79	33.716	95
23	31.033	95	61.022	93	8.519	32	17.011	59	25.448	83	33.811	100
24	31.128	99	61.115	97	8.551	32	17.070	63	25.531	88	33.911	104
25	31.227	105	61.212	102	8.583	35	17.133	66	25.619	91	34.015	110
26	31.332	109	61.314	107	8.618	36	17.199	69	25.710	96	34.125	114
27	31.441	114	61.421	110	8.654	38	17.268	72	25.806	100	34.239	120
28	31.555	120	61.531	116	8.692	39	17.340	75	25.906	105	34.359	125
29	31.675	124	61.647	120	8.731	41	17.415	79	26.011	109	34.484	130
30	31.799	130	61.767	125	8.772	43	17.494	82	26.120	114	34.614	136
31	31.929	135	61.892	129	8.815	45	17.576	85	26.234	118	34.750	141
32	32.064	140	62.021	135	8.860	46	17.661	89	26.352	123	34.891	147
33	32.204	146	62.156	140	8.906	49	17.750	93	26.475	129	35.038	153
34	32.350	152	62.296	144	8.955	50	17.843	96	26.604	133	35.191	158
35	32.502	157	62.440	150	9.005	53	17.939	100	26.737	139	35.349	165
36	32.659	164	62.590	155	9.058	55	18.039	105	26.876	144	35.514	171
37	32.823	170	62.745	160	9.113	56	18.144	108	27.020	150	35.685	178
38	32.993	177	62.905	166	9.169	60	18.252	112	27.170	155	35.863	184
39	33.170	182	63.071	172	9.229	61	18.364	117	27.325	162	36.047	191
40	33.352	190	63.243	177	9.290	64	18.481	122	27.487	167	36.238	198
41	33.542	197	63.420	183	9.354	66	18.603	126	27.654	174	36.436	206
42	33.739	204	63.603	189	9.420	69	18.729	131	27.828	180	36.642	212
43	33.943	211	63.792	195	9.489	71	18.860	135	28.008	187	36.854	221
44	34.154	219	63.987	201	9.560	75	18.995	141	28.195	193	37.075	228
45	34.373	227	64.188	208	9.635	77	19.136	147	28.388	201	37.303	237

$n = 11$

Θ	am $(\frac{5}{11}K)$	Δ	am $(\frac{6}{11}K)$	Δ	am $(\frac{7}{11}K)$	Δ	am $(\frac{8}{11}K)$	Δ	am $(\frac{9}{11}K)$	Δ	am $(\frac{10}{11}K)$	Δ
0	40.909	2	49.091	2	57.273	2	65.455	1	73.636	2	81.818	1
1	40.911	7	49.093	7	57.275	6	65.456	5	73.638	3	81.819	2
2	40.918	11	49.100	10	57.281	10	65.461	8	73.641	6	81.821	3
3	40.929	15	49.110	15	57.291	14	65.469	12	73.647	8	81.824	4
4	40.944	19	49.125	20	57.305	17	65.481	15	73.655	11	81.828	6
5	40.963	24	49.145	24	57.322	22	65.496	18	73.666	13	81.834	6
6	40.987	28	49.169	28	57.344	26	65.514	21	73.679	15	81.840	8
7	41.015	33	49.197	33	57.370	30	65.535	25	73.694	18	81.848	10
8	41.048	37	49.230	37	57.400	34	65.560	29	73.712	20	81.858	10
9	41.085	41	49.267	41	57.434	38	65.589	31	73.732	23	81.868	12
10	41.126	46	49.308	46	57.472	42	65.620	35	73.755	25	81.880	13
11	41.172	50	49.354	50	57.514	46	65.655	38	73.780	27	81.893	14
12	41.222	55	49.404	55	57.560	51	65.693	42	73.807	30	81.907	16
13	41.277	60	49.459	59	57.611	54	65.735	45	73.837	32	81.923	16
14	41.337	64	49.518	64	57.665	59	65.780	49	73.869	35	81.939	19
15	41.401	69	49.582	69	57.724	62	65.829	52	73.904	37	81.958	19
16	41.470	73	49.651	73	57.786	67	65.881	55	73.941	40	81.977	21
17	41.543	78	49.724	78	57.853	72	65.936	60	73.981	42	81.998	21
18	41.621	83	49.802	82	57.925	75	65.996	62	74.023	45	82.019	24
19	41.704	88	49.884	88	58.000	80	66.058	66	74.068	47	82.043	24
20	41.792	93	49.972	92	58.080	85	66.124	70	74.115	50	82.067	26
21	41.885	97	50.064	97	58.165	89	66.194	74	74.165	52	82.093	27
22	41.982	103	50.161	102	58.254	93	66.268	77	74.217	55	82.120	29
23	42.085	108	50.263	107	58.347	98	66.345	81	74.272	58	82.149	30
24	42.193	113	50.370	113	58.445	103	66.426	85	74.330	60	82.179	31
25	42.306	118	50.483	117	58.548	107	66.511	88	74.390	63	82.210	33
26	42.424	124	50.600	123	58.655	112	66.599	92	74.453	66	82.243	34
27	42.548	129	50.723	128	58.767	116	66.691	97	74.519	68	82.277	36
28	42.677	135	50.851	133	58.883	122	66.788	100	74.587	72	82.313	37
29	42.812	140	50.984	139	59.005	126	66.888	104	74.659	74	82.350	38
30	42.952	146	51.123	145	59.131	132	66.992	109	74.733	77	82.388	40
31	43.098	152	51.268	150	59.263	137	67.101	112	74.810	80	82.428	42
32	43.250	158	51.418	156	59.400	141	67.213	117	74.890	83	82.470	43
33	43.408	164	51.574	162	59.541	148	67.330	121	74.973	85	82.513	44
34	43.572	171	51.736	169	59.689	152	67.451	125	75.058	89	82.557	46
35	43.743	177	51.905	174	59.841	158	67.576	130	75.147	92	82.603	48
36	43.920	183	52.079	181	59.999	164	67.706	134	75.239	95	82.651	49
37	44.103	190	52.260	187	60.163	169	67.840	139	75.334	98	82.700	51
38	44.293	197	52.447	193	60.332	175	67.979	143	75.432	102	82.751	52
39	44.490	205	52.640	201	60.507	181	68.122	148	75.534	105	82.803	55
40	44.695	211	52.841	207	60.688	187	68.270	153	75.639	108	82.858	56
41	44.906	219	53.048	215	60.875	193	68.423	158	75.747	111	82.914	57
42	45.125	227	53.263	221	61.068	200	68.581	163	75.858	115	82.971	60
43	45.352	234	53.484	230	61.268	206	68.744	168	75.973	119	83.031	61
44	45.586	243	53.714	236	61.474	213	68.912	174	76.092	122	83.092	63
45	45.829	251	53.950	245	61.687	220	69.086	179	76.214	126	83.155	65

	$n = 3$				$n = 11$							
Θ	am $(\frac{1}{3}K)$	Δ	am $(\frac{2}{3}K)$	Δ	am $(\frac{1}{11}K)$	Δ	am $(\frac{2}{11}K)$	Δ	am $(\frac{3}{11}K)$	Δ	am $(\frac{4}{11}K)$	Δ
		219		201		75		141		193		228
45	34.373	227	64.188	208	9.635	77	19.136	147	28.388	201	37.303	237
46	34.600	235	64.396	214	9.712	80	19.283	152	28.589	209	37.540	245
47	34.835	244	64.610	221	9.792	83	19.435	157	28.798	216	37.785	254
48	35.079	253	64.831	228	9.875	87	19.592	164	29.014	224	38.039	263
49	35.332	262	65.059	235	9.962	90	19.756	170	29.238	233	38.302	272
50	35.594	271	65.294	242	10.052	93	19.926	177	29.471	241	38.574	282
51	35.865	282	65.536	250	10.145	97	20.103	184	29.712	251	38.856	293
52	36.147	291	65.786	258	10.242	101	20.287	190	29.963	260	39.149	303
53	36.438	303	66.044	265	10.343	105	20.477	199	30.223	270	39.452	314
54	36.741	314	66.309	274	10.448	110	20.676	206	30.493	280	39.766	326
55	37.055	326	66.583	283	10.558	114	20.882	215	30.773	292	40.092	338
56	37.381	338	66.866	291	10.672	119	21.097	223	31.065	302	40.430	351
57	37.719	352	67.157	301	10.791	124	21.320	233	31.367	315	40.781	364
58	38.071	365	67.458	310	10.915	129	21.553	243	31.682	328	41.145	378
59	38.436	380	67.768	320	11.044	135	21.796	253	32.010	341	41.523	392
60	38.816	395	68.088	331	11.179	141	22.049	264	32.351	356	41.915	408
61	39.211	411	68.419	341	11.320	148	22.313	276	32.707	370	42.323	425
62	39.622	428	68.760	352	11.468	154	22.589	288	33.077	387	42.748	442
63	40.050	447	69.112	364	11.622	162	22.877	302	33.464	403	43.190	460
64	40.497	465	69.476	377	11.784	170	23.179	316	33.867	422	43.650	479
65	40.962	487	69.853	389	11.954	178	23.495	331	34.289	441	44.129	501
66	41.449	508	70.242	402	12.132	188	23.826	349	34.730	462	44.630	522
67	41.957	532	70.644	417	12.320	198	24.175	366	35.192	485	45.152	546
68	42.489	557	71.061	432	12.518	209	24.541	385	35.677	509	45.698	572
69	43.046	585	71.493	448	12.727	220	24.926	407	36.186	535	46.270	599
70	43.631	614	71.941	465	12.947	234	25.333	430	36.721	564	46.869	628
71	44.245	647	72.406	483	13.181	248	25.763	455	37.285	595	47.497	661
72	44.892	682	72.889	502	13.429	265	26.218	484	37.880	630	48.158	695
73	45.574	721	73.391	522	13.694	282	26.702	515	38.510	667	48.853	734
74	46.295	764	73.913	545	13.976	302	27.217	550	39.177	709	49.587	777
75	47.059	811	74.458	568	14.278	326	27.767	589	39.886	757	50.364	823
76	47.870	865	75.026	595	14.604	351	28.356	634	40.643	809	51.187	875
77	48.735	925	75.621	623	14.955	381	28.990	685	41.452	870	52.062	935
78	49.660	993	76.244	654	15.336	417	29.675	745	42.322	939	52.997	1001
79	50.653	1073	76.898	690	15.753	458	30.420	815	43.261	1020	53.998	1079
80	51.726	1166	77.588	729	16.211	509	31.235	898	44.281	1114	55.077	1168
81	52.892	1276	78.317	773	16.720	570	32.133	1000	45.395	1228	56.245	1274
82	54.168	1411	79.090	826	17.290	647	33.133	1127	46.623	1369	57.519	1403
83	55.579	1578	79.916	886	17.937	748	34.260	1288	47.992	1544	58.922	1563
84	57.157	1794	80.802	961	18.685	885	35.548	1505	49.536	1776	60.485	1767
85	58.951	2088	81.763	1053	19.570	1080	37.053	1810	51.312	2095	62.252	2043
86	61.039	2515	82.816	1177	20.650	1386	38.863	2277	53.407	2568	64.295	2442
87	63.554	3219	83.993	1358	22.036	1937	41.140	3089	55.975	3363	66.737	3087
88	66.773	4679	85.351	1671	23.973	3250	44.229	4937	59.338	5076	69.824	4410
89	71.452		87.022		27.223		49.166		64.414		74.234	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 11$

Θ	$\mathrm{am}(\frac{5}{11}K)$	Δ	$\mathrm{am}(\frac{6}{11}K)$	Δ	$\mathrm{am}(\frac{7}{11}K)$	Δ	$\mathrm{am}(\frac{8}{11}K)$	Δ	$\mathrm{am}(\frac{9}{11}K)$	Δ	$\mathrm{am}(\frac{10}{11}K)$	Δ
		243		236		213		174		122		63
45	45.829	251	53.950	245	61.687	220	69.086	179	76.214	126	83.155	65
46	46.080	260	54.195	253	61.907	227	69.265	184	76.340	130	83.220	67
47	46.340	268	54.448	261	62.134	234	69.449	190	76.470	134	83.287	69
48	46.608	278	54.709	270	62.368	241	69.639	196	76.604	137	83.356	71
49	46.886	288	54.979	279	62.609	249	69.835	202	76.741	142	83.427	73
50	47.174	297	55.258	288	62.858	257	70.037	208	76.883	146	83.500	75
		308		298		265		214		150		77
51	47.471	319	55.546	307	63.115	273	70.245	221	77.029	155	83.575	80
52	47.779	329	55.844	318	63.380	282	70.459	228	77.179	159	83.652	82
53	48.098	341	56.151	328	63.653	291	70.680	234	77.334	164	83.732	84
54	48.427	353	56.469	339	63.935	300	70.908	242	77.493	169	83.814	86
55	48.768		56.797		64.226		71.142		77.657		83.898	
		366		351		310		249		173		90
56	49.121	379	57.136	362	64.526	320	71.384	256	77.826	179	83.984	91
57	49.487	393	57.487	375	64.836	330	71.633	265	77.999	184	84.074	95
58	49.866	406	57.849	387	65.156	340	71.889	272	78.178	190	84.165	97
59	50.259	423	58.224	402	65.486	352	72.154	282	78.362	195	84.260	100
60	50.665		58.611		65.826		72.426		78.552		84.357	
		437		415		364		290		201		103
61	51.088	455	59.013	430	66.178	376	72.708	299	78.747	208	84.457	105
62	51.525	472	59.428	446	66.542	388	72.998	309	78.948	214	84.560	110
63	51.980	491	59.858	462	66.918	402	73.297	319	79.156	220	84.665	112
64	52.452	510	60.304	479	67.306	416	73.606	329	79.370	227	84.775	116
65	52.943		60.766		67.708		73.925		79.590		84.887	
		532		497		431		340		235		119
66	53.453	553	61.245	517	68.124	446	74.254	352	79.817	242	85.003	124
67	53.985	578	61.742	537	68.555	462	74.594	364	80.052	250	85.122	127
68	54.538	603	62.259	559	69.001	480	74.946	377	80.294	259	85.246	131
69	55.116	630	62.796	583	69.463	499	75.310	391	80.544	267	85.373	136
70	55.719		63.355		69.943		75.687		80.803		85.504	
		660		607		518		405		277		140
71	56.349	692	63.938	634	70.442	540	76.078	420	81.070	287	85.640	145
72	57.009	726	64.545	664	70.960	562	76.483	437	81.347	298	85.780	151
73	57.701	765	65.179	695	71.500	586	76.903	455	81.634	308	85.925	156
74	58.427	806	65.843	729	72.062	613	77.340	473	81.932	321	86.076	161
75	59.192		66.538		72.648		77.795		82.240		86.232	
		853		767		642		494		334		168
76	59.998	904	67.267	809	73.261	674	78.268	517	82.561	349	86.393	176
77	60.851	962	68.034	855	73.903	709	78.762	541	82.895	363	86.561	182
78	61.755	1028	68.843	908	74.577	748	79.279	569	83.244	381	86.737	191
79	62.717	1104	69.698	967	75.286	792	79.820	599	83.607	400	86.919	200
80	63.745		70.606		76.034		80.389		83.988		87.110	
		1193		1036		842		633		421		210
81	64.849	1299	71.573	1117	76.826	901	80.988	673	84.388	446	87.310	221
82	66.042	1428	72.609	1215	77.668	970	81.621	720	84.809	473	87.520	234
83	67.341	1590	73.726	1335	78.569	1054	82.294	775	85.255	507	87.741	250
84	68.769	1806	74.941	1491	79.539	1162	83.014	844	85.728	548	87.975	269
85	70.359		76.276		80.593		83.789		86.235		88.225	
		2107		1705		1304		934		599		292
86	72.165	2581	77.767	2030	81.755	1515	84.633	1064	86.783	672	88.494	325
87	74.272	3505	79.472	2633	83.059	1889	85.567	1282	87.382	789	88.786	375
88	76.853		81.502		84.574		86.631		88.054		89.111	
89	80.358		84.135		86.463		87.913		88.843		89.486	
90	90.000		90.000		90.000		90.000		90.000		90.000	

	$n = 4$						$n = 10$					
Θ	am $(\frac{1}{4}K)$	Δ	am $(\frac{2}{4}K)$	Δ	am $(\frac{3}{4}K)$	Δ	am $(\frac{1}{10}K)$	Δ	am $(\frac{2}{10}K)$	Δ	am $(\frac{3}{10}K)$	Δ
0	22.500	2	45.000	2	67.500	2	9.000	1	18.000	1	27.000	2
1	22.502	4	45.002	7	67.502	4	9.001	2	18.001	4	27.002	5
2	22.506	8	45.009	11	67.506	8	9.003	3	18.005	7	27.007	9
3	22.514	11	45.020	15	67.514	11	9.006	5	18.012	9	27.016	12
4	22.525	14	45.035	20	67.525	14	9.011	6	18.021	11	27.028	16
5	22.539	17	45.055	24	67.539	17	9.017	7	18.032	14	27.044	20
6	22.556	20	45.079	28	67.556	20	9.024	9	18.046	17	27.064	23
7	22.576	23	45.107	33	67.576	23	9.033	10	18.063	19	27.087	26
8	22.599	27	45.140	37	67.599	26	9.043	12	18.082	22	27.113	31
9	22.626	29	45.177	42	67.625	30	9.055	13	18.104	25	27.144	34
10	22.655	33	45.219	47	67.655	33	9.068	14	18.129	27	27.178	37
11	22.688	36	45.266	50	67.688	35	9.082	16	18.156	30	27.215	41
12	22.724	40	45.316	56	67.723	39	9.098	17	18.186	33	27.256	45
13	22.764	42	45.372	60	67.762	43	9.115	19	18.219	36	27.301	49
14	22.806	46	45.432	65	67.805	45	9.134	20	18.255	38	27.350	53
15	22.852	50	45.497	69	67.850	49	9.154	22	18.293	41	27.403	56
16	22.902	52	45.566	74	67.899	52	9.176	23	18.334	44	27.459	60
17	22.954	56	45.640	79	67.951	55	9.199	24	18.378	47	27.519	65
18	23.010	60	45.719	83	68.006	59	9.223	27	18.425	49	27.584	68
19	23.070	63	45.802	89	68.065	61	9.250	27	18.474	53	27.652	72
20	23.133	67	45.891	93	68.126	66	9.277	30	18.527	56	27.724	76
21	23.200	71	45.984	99	68.192	69	9.307	31	18.583	58	27.800	81
22	23.271	74	46.083	103	68.261	72	9.338	32	18.641	62	27.881	85
23	23.345	78	46.186	109	68.333	75	9.370	34	18.703	65	27.966	89
24	23.423	82	46.295	114	68.408	79	9.404	36	18.768	68	28.055	93
25	23.505	86	46.409	119	68.487	83	9.440	38	18.836	72	28.148	98
26	23.591	89	46.528	124	68.570	86	9.478	40	18.908	75	28.246	102
27	23.680	94	46.652	130	68.656	90	9.518	41	18.983	78	28.348	107
28	23.774	98	46.782	135	68.746	94	9.559	43	19.061	82	28.455	112
29	23.872	102	46.917	142	68.840	97	9.602	45	19.143	85	28.567	116
30	23.974	107	47.059	146	68.937	102	9.647	47	19.228	89	28.683	122
31	24.081	111	47.205	153	69.039	105	9.694	49	19.317	93	28.805	126
32	24.192	116	47.358	159	69.144	109	9.743	51	19.410	96	28.931	132
33	24.308	120	47.517	165	69.253	112	9.794	54	19.506	101	29.063	137
34	24.428	126	47.682	171	69.365	117	9.848	55	19.607	105	29.200	142
35	24.554	130	47.853	177	69.482	121	9.903	58	19.712	108	29.342	148
36	24.684	135	48.030	184	69.603	126	9.961	60	19.820	113	29.490	154
37	24.819	140	48.214	191	69.729	129	10.021	62	19.933	118	29.644	160
38	24.959	146	48.405	197	69.858	134	10.083	65	20.051	122	29.804	165
39	25.105	152	48.602	204	69.992	138	10.148	67	20.173	127	29.969	172
40	25.257	157	48.806	212	70.130	143	10.215	70	20.300	131	30.141	179
41	25.414	163	49.018	219	70.273	147	10.285	73	20.431	137	30.320	184
42	25.577	169	49.237	226	70.420	152	10.358	75	20.568	142	30.504	192
43	25.746	176	49.463	234	70.572	157	10.433	78	20.710	147	30.696	199
44	25.922	182	49.697	243	70.729	161	10.511	82	20.857	153	30.895	206
45	26.104	189	49.940	250	70.890	167	10.593	84	21.010	159	31.101	214

$n = 10$

Θ	$\mathrm{am}(\frac{4}{10}K)$	Δ	$\mathrm{am}(\frac{5}{10}K)$	Δ	$\mathrm{am}(\frac{6}{10}K)$	Δ	$\mathrm{am}(\frac{7}{10}K)$	Δ	$\mathrm{am}(\frac{8}{10}K)$	Δ	$\mathrm{am}(\frac{9}{10}K)$	Δ
0	36.000	2	45.000	2	54.000	2	63.000	2	72.000	1	81.000	1
1	36.002	6	45 002	7	54.002	6	63.002	5	72.001	4	81.001	2
2	36.008	11	45.009	11	54.008	11	63.007	9	72.005	7	81.003	3
3	36.019	14	45.020	15	54.019	14	63.016	12	72.012	9	81.006	5
4	36.033	19	45.035	20	54.033	19	63.028	16	72.021	11	81.011	6
5	36.052	23	45.055	24	54.052	23	63.044	20	72.032	14	81.017	7
6	36.075	27	45.079	28	54.075	27	63.064	23	72.046	17	81.024	9
7	36.102	31	45.107	33	54.102	31	63.087	26	72.063	19	81.033	10
8	36.133	36	45.140	37	54.133	36	63.113	30	72.082	22	81.043	12
9	36.169	40	45.177	42	54.169	39	63.143	34	72.104	25	81.055	13
10	36.209	44	45.219	47	54.208	44	63.177	38	72.129	27	81.068	14
11	36.253	48	45.266	50	54.252	49	63.215	41	72.156	30	81.082	16
12	36.301	53	45.316	56	54.301	52	63.256	44	72.186	32	81.098	17
13	36.354	57	45.372	60	54.353	57	63.300	49	72.218	35	81.115	18
14	36.411	62	45.432	65	54.410	62	63.349	52	72.253	38	81.133	20
15	36.473	66	45.497	69	54.472	65	63.401	55	72.291	40	81.153	21
16	36.539	71	45.566	74	54.537	71	63.456	60	72.331	43	81.174	23
17	36.610	75	45.640	79	54.608	74	63.516	63	72.374	46	81.197	24
18	36.685	80	45.719	83	54.682	79	63.579	67	72.420	49	81.221	25
19	36.765	84	45.802	89	54.761	84	63.646	71	72.469	51	81.246	27
20	36.849	90	45.891	93	54.845	89	63.717	75	72.520	55	81.273	29
21	36.939	94	45.984	99	54.934	93	63.792	79	72.575	57	81.302	30
22	37.033	99	46.083	103	55.027	98	63.871	83	72.632	59	81.332	31
23	37.132	104	46.186	109	55.125	102	63.954	87	72.691	63	81.363	33
24	37.236	109	46.295	114	55.227	108	64.041	90	72.754	66	81.396	34
25	37.345	114	46.409	119	55.335	112	64.131	95	72.820	68	81.430	36
26	37.459	119	46.528	124	55.447	117	64.226	99	72.888	72	81.466	38
27	37.578	125	46.652	130	55.564	123	64.325	104	72.960	74	81.504	39
28	37.703	130	46.782	135	55.687	127	64.429	107	73.034	78	81.543	40
29	37.833	136	46.917	142	55.814	133	64.536	112	73.112	81	81.583	43
30	37.969	141	47.059	146	55.947	138	64.648	116	73.193	84	81.626	43
31	38.110	147	47.205	153	56.085	144	64.764	121	73.277	87	81.669	46
32	38.257	153	47.358	159	56.229	149	64.885	125	73.364	90	81.715	47
33	38.410	159	47.517	165	56.378	154	65.010	130	73.454	93	81.762	49
34	38.569	165	47.682	171	56.532	160	65.140	135	73.547	97	81.811	50
35	38.734	172	47.853	177	56.692	166	65.275	139	73.644	100	81.861	53
36	38.906	178	48.030	184	56.858	172	65.414	144	73.744	103	81.914	54
37	39.084	184	48.214	191	57.030	179	65.558	149	73.847	107	81.968	55
38	39.268	191	48.405	197	57.209	184	65.707	154	73.954	111	82.023	58
39	39.459	199	48.602	204	57.393	190	65.861	160	74.065	114	82.081	59
40	39.658	205	48.806	212	57.583	197	66.021	164	74.179	118	82.140	62
41	39.863	213	49.018	219	57.780	204	66.185	170	74.297	121	82.202	63
42	40.076	221	49.237	226	57.984	210	66.355	175	74.418	126	82.265	65
43	40.297	228	49.463	234	58.194	218	66.530	181	74.544	129	82.330	68
44	40.525	237	49.697	243	58.412	224	66.711	187	74.673	133	82.398	69
45	40.762	245	49.940	250	58.636	232	66.898	193	74.806	138	82.467	71

	$n = 4$						$n = 10$					
Θ	am $(\frac{1}{4}K)$	Δ	am $(\frac{2}{4}K)$	Δ	am $(\frac{3}{4}K)$	Δ	am $(\frac{1}{10}K)$	Δ	am $(\frac{2}{10}K)$	Δ	am $(\frac{3}{10}K)$	Δ
		182		243		161		82		153		206
45	26.104	189	49.940	250	70.890	167	10.593	84	21.010	159	31.101	214
46	26.293	196	50.190	259	71.057	172	10.677	88	21.169	164	31.315	222
47	26.489	204	50.449	268	71.229	177	10.765	91	21.333	171	31.537	230
48	26.693	211	50.717	276	71.406	182	10.856	95	21.504	178	31.767	238
49	26.904	219	50.993	286	71.588	188	10.951	99	21.682	184	32.005	247
50	27.123	227	51.279	296	71.776	193	11.050	102	21.866	191	32.252	256
51	27.350	236	51.575	306	71.969	200	11.152	107	22.057	199	32.508	266
52	27.586	245	51.881	316	72.169	205	11.259	110	22.256	206	32.774	276
53	27.831	254	52.197	327	72.374	212	11.369	116	22.462	215	33.050	286
54	28.085	265	52.524	338	72.586	218	11.485	120	22.677	223	33.336	298
55	28.350	275	52.862	349	72.804	224	11.605	125	22.900	233	33.634	308
56	28.625	285	53.211	362	73.028	231	11.730	130	23.133	241	33.942	321
57	28.910	298	53.573	374	73.259	239	11.860	135	23.374	252	34.263	333
58	29.208	309	53.947	387	73.498	245	11.995	142	23.626	262	34.596	347
59	29.517	323	54.334	402	73.743	253	12.137	148	23.888	273	34.943	360
60	29.840	336	54.736	415	73.996	261	12.285	154	24.161	286	35.303	376
61	30.176	350	55.151	431	74.257	269	12.439	162	24.447	298	35.679	391
62	30.526	366	55.582	446	74.526	278	12.601	169	24.745	311	36.070	407
63	30.892	382	56.028	464	74.804	286	12.770	177	25.056	325	36.477	426
64	31.274	400	56.492	480	75.090	295	12.947	186	25.381	341	36.903	444
65	31.674	419	56.972	500	75.385	306	13.133	195	25.722	357	37.347	464
66	32.093	438	57.472	519	75.691	315	13.328	206	26.079	375	37.811	486
67	32.531	460	57.991	540	76.006	325	13.534	216	26.454	395	38.297	509
68	32.991	484	58.531	563	76.331	337	13.750	228	26.849	415	38.806	534
69	33.475	509	59.094	586	76.668	349	13.978	242	27.264	437	39.340	562
70	33.984	537	59.680	612	77.017	361	14.220	255	27.701	462	39.902	590
71	34.521	567	60.292	639	77.378	374	14.475	272	28.163	489	40.492	622
72	35.088	601	60.931	668	77.752	388	14.747	288	28.652	520	41.114	658
73	35.689	637	61.599	701	78.140	403	15.035	309	29.172	552	41.772	696
74	36.326	679	62.300	736	78.543	419	15.344	330	29.724	589	42.468	739
75	37.005	724	63.036	773	78.962	436	15.674	356	30.313	631	43.207	786
76	37.729	777	63.809	816	79.398	455	16.030	383	30.944	679	43.993	840
77	38.506	835	64.625	863	79.853	475	16.413	417	31.623	732	44.833	901
78	39.341	904	65.488	915	80.328	498	16.830	454	32.355	795	45.734	971
79	40.245	983	66.403	975	80.826	522	17.284	500	33.150	868	46.705	1051
80	41.228	1077	67.378	1042	81.348	549	17.784	554	34.018	956	47.756	1146
81	42.305	1190	68.420	1122	81.897	581	18.338	621	34.974	1062	48.902	1259
82	43.495	1329	69.542	1214	82.478	616	18.959	705	36.036	1194	50.161	1397
83	44.824	1506	70.756	1328	83.094	657	19.664	814	37.230	1362	51.558	1572
84	46.330	1739	72.084	1468	83.751	707	20.478	962	38.592	1587	53.130	1797
85	48.069	2061	73.552	1653	84.458	768	21.440	1173	40.179	1901	54.927	2108
86	50.130	2543	75.205	1909	85.226	848	22.613	1503	42.080	2379	57.035	2563
87	52.673	3361	77.114	2304	86.074	960	24.116	2094	44.459	3206	59.598	3321
88	56.034	5146	79.418	3056	87.034	1149	26.210	3501	47.665	5066	62.919	4928
89	61.180		82.474		88.183		29.711		52.731		67.847	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 10$

Θ	$\mathrm{am}(\frac{4}{10}K)$	Δ	$\mathrm{am}(\frac{5}{10}K)$	Δ	$\mathrm{am}(\frac{6}{10}K)$	Δ	$\mathrm{am}(\frac{7}{10}K)$	Δ	$\mathrm{am}(\frac{8}{10}K)$	Δ	$\mathrm{am}(\frac{9}{10}K)$	Δ
		237		243		224		187		133		69
45	40.762	245	49.940	250	58.636	232	66.898	193	74.806	138	82.467	71
46	41.007	253	50.190	259	58.868	239	67.091	198	74.944	141	82.538	74
47	41.260	263	50.449	268	59.107	247	67.289	205	75.085	146	82.612	75
48	41.523	272	50.717	276	59.354	255	67.494	211	75.231	150	82.687	78
49	41.795	281	50.993	286	59.609	264	67.705	217	75.381	155	82.765	80
50	42.076	292	51.279	296	59.873	271	67.922	225	75.536	159	82.845	83
51	42.368	301	51.575	306	60.144	281	68.147	231	75.695	164	82.928	85
52	42.669	313	51.881	316	60.425	289	68.378	238	75.859	168	83.013	87
53	42.982	324	52.197	327	60.714	299	68.616	246	76.027	174	83.100	90
54	43.306	335	52.524	338	61.013	308	68.862	253	76.201	179	83.190	92
55	43.641	348	52.862	349	61.321	319	69.115	261	76.380	184	83.282	95
56	43.989	361	53.211	362	61.640	329	69.376	269	76.564	190	83.377	98
57	44.350	374	53.573	374	61.969	339	69.645	277	76.754	195	83.475	101
58	44.724	387	53.947	387	62.308	351	69.922	286	76.949	201	83.576	104
59	45.111	403	54.334	402	62.659	362	70.208	295	77.150	208	83.680	106
60	45.514	418	54.736	415	63.021	375	70.503	304	77.358	213	83.786	110
61	45.932	435	55.151	431	63.396	387	70.807	314	77.571	220	83.896	113
62	46.367	452	55.582	446	63.783	401	71.121	324	77.791	227	84.009	116
63	46.819	470	56.028	464	64.184	414	71.445	335	78.018	233	84.125	120
64	47.289	489	56.492	480	64.598	429	71.780	346	78.251	241	84.245	124
65	47.778	510	56.972	500	65.027	445	72.126	357	78.492	249	84.369	127
66	48.288	532	57.472	519	65.472	461	72.483	369	78.741	257	84.496	131
67	48.820	555	57.991	540	65.933	477	72.852	383	78.998	265	84.627	136
68	49.375	580	58.531	563	66.410	496	73.235	395	79.263	274	84.763	139
69	49.955	607	59.094	586	66.906	515	73.630	410	79.537	283	84.902	145
70	50.562	636	59.680	612	67.421	536	74.040	425	79.820	293	85.047	149
71	51.198	668	60.292	639	67.957	557	74.465	441	80.113	303	85.196	154
72	51.866	701	60.931	668	68.514	581	74.906	458	80.416	314	85.350	160
73	52.567	739	61.599	701	69.095	607	75.364	476	80.730	327	85.510	165
74	53.306	780	62.300	736	69.702	633	75.840	496	81.057	338	85.675	171
75	54.086	825	63.036	773	70.335	663	76.336	517	81.395	352	85.846	178
76	54.911	876	63.809	816	70.998	696	76.853	540	81.747	367	86.024	185
77	55.787	932	64.625	863	71.694	731	77.393	566	82.114	382	86.209	192
78	56.719	996	65.488	915	72.425	771	77.959	593	82.496	400	86.401	201
79	57.715	1069	66.403	975	73.196	815	78.552	623	82.896	419	86.602	210
80	58.784	1154	67.378	1042	74.011	865	79.175	658	83.315	440	86.812	220
81	59.938	1254	68.420	1122	74.876	922	79.833	697	83.755	464	87.032	231
82	61.192	1374	69.542	1214	75.798	990	80.530	741	84.219	490	87.263	243
83	62.566	1522	70.756	1328	76.788	1070	81.271	795	84.709	522	87.506	259
84	64.088	1711	72.084	1468	77.858	1167	82.066	858	85.231	560	87.765	275
85	65.799	1963	73.552	1653	79.025	1293	82.924	937	85.791	605	88.040	296
86	67.762	2323	75.205	1909	80.318	1462	83.861	1042	86.396	664	88.336	322
87	70.085	2900	77.114	2304	81.780	1714	84.903	1192	87.060	746	88.658	358
88	72.985	4056	79.418	3056	83.494	2169	86.095	1450	87.806	880	89.016	413
89	77.041		82.474		85.663		87.545		88.686		89.429	
90	90.000		90.000		90.000		90.000		90.000		90.000	

	$n = 5$								$n = 9$			
Θ	am $(\frac{1}{5}K)$	Δ	am $(\frac{2}{5}K)$	Δ	am $(\frac{3}{5}K)$	Δ	am $(\frac{4}{5}K)$	Δ	am $(\frac{1}{9}K)$	Δ	am $(\frac{2}{9}K)$	Δ
0	18.000	1	36.000	2	54.000	2	72.000	1	10.000	1	20.000	1
1	18.001	4	36.002	6	54.002	6	72.001	4	10.001	2	20.001	5
2	18.005	7	36.008	11	54.008	11	72.005	7	10.003	4	20.006	7
3	18.012	9	36.019	14	54.019	14	72.012	9	10.007	5	20.013	9
4	18.021	11	36.033	19	54.033	19	72.021	11	10.012	7	20.022	13
5	18.032	14	36.052	23	54.052	23	72.032	14	10.019	8	20.035	16
6	18.046	17	36.075	27	54.075	27	72.046	17	10.027	10	20.051	18
7	18.063	19	36.102	31	54.102	31	72.063	19	10.037	11	20.069	21
8	18.082	22	36.133	36	54.133	36	72.082	22	10.048	13	20.090	24
9	18.104	25	36.169	40	54.169	39	72.104	25	10.061	14	20.114	27
10	18.129	27	36.209	44	54.208	44	72.129	27	10.075	16	20.141	30
11	18.156	30	36.253	48	54.252	49	72.156	30	10.091	18	20.171	33
12	18.186	33	36.301	53	54.301	52	72.186	32	10.109	19	20.204	36
13	18.219	36	36.354	57	54.353	57	72.218	35	10.128	20	20.240	38
14	18.255	38	36.411	62	54.410	62	72.253	38	10.148	23	20.278	42
15	18.293	41	36.473	66	54.472	65	72.291	40	10.171	23	20.320	45
16	18.334	44	36.539	71	54.537	71	72.331	43	10.194	26	20.365	48
17	18.378	47	36.610	75	54.608	74	72.374	46	10.220	27	20.413	51
18	18.425	49	36.685	80	54.682	79	72.420	49	10.247	29	20.464	55
19	18.474	53	36.765	84	54.761	84	72.469	51	10.276	31	20.519	57
20	18.527	56	36.849	90	54.845	89	72.520	55	10.307	32	20.576	61
21	18.583	58	36.939	94	54.934	93	72.575	57	10.339	35	20.637	64
22	18.641	62	37.033	99	55.027	98	72.632	59	10.374	36	20.701	68
23	18.703	65	37.132	104	55.125	102	72.691	63	10.410	38	20.769	71
24	18.768	68	37.236	109	55.227	108	72.754	66	10.448	39	20.840	74
25	18.836	72	37.345	114	55.335	112	72.820	68	10.487	42	20.914	78
26	18.908	75	37.459	119	55.447	117	72.888	72	10.529	44	20.992	82
27	18.983	78	37.578	125	55.564	123	72.960	74	10.573	46	21.074	85
28	19.061	82	37.703	130	55.687	127	73.034	78	10.619	47	21.159	90
29	19.143	85	37.833	136	55.814	133	73.112	81	10.666	50	21.249	93
30	19.228	89	37.969	141	55.947	138	73.193	84	10.716	52	21.342	97
31	19.317	93	38.110	147	56.085	144	73.277	87	10.768	55	21.439	101
32	19.410	96	38.257	153	56.229	149	73.364	90	10.823	56	21.540	106
33	19.506	101	38.410	159	56.378	154	73.454	93	10.879	59	21.646	109
34	19.607	105	38.569	165	56.532	160	73.547	97	10.938	61	21.755	115
35	19.712	108	38.734	172	56.692	166	73.644	100	10.999	64	21.870	118
36	19.820	113	38.906	178	56.858	172	73.744	103	11.063	66	21.988	124
37	19.933	118	39.084	184	57.030	179	73.847	107	11.129	69	22.112	128
38	20.051	122	39.268	191	57.209	184	73.954	111	11.198	72	22.240	133
39	20.173	127	39.459	199	57.393	190	74.065	114	11.270	74	22.373	138
40	20.300	131	39.658	205	57.583	197	74.179	118	11.344	78	22.511	144
41	20.431	137	39.863	213	57.780	204	74.297	121	11.422	80	22.655	149
42	20.568	142	40.076	221	57.984	210	74.418	126	11.502	83	22.804	154
43	20.710	147	40.297	228	58.194	218	74.544	129	11.585	87	22.958	161
44	20.857	153	40.525	237	58.412	224	74.673	133	11.672	90	23.119	166
45	21.010	159	40.762	245	58.636	232	74.806	138	11.762	94	23.285	173

$n = 9$

Θ	am $(\frac{3}{9}K)$	Δ	am $(\frac{4}{9}K)$	Δ	am $(\frac{5}{9}K)$	Δ	am $(\frac{6}{9}K)$	Δ	am $(\frac{7}{9}K)$	Δ	am $(\frac{8}{9}K)$	Δ
0	30.000	2	40.000	2	50.000	2	60.000	2	70.000	1	80.000	1
1	30.002	6	40.002	7	50.002	7	60.002	6	70.001	5	80.001	2
2	30.008	9	40.009	10	50.009	10	60.008	9	70.006	7	80.003	4
3	30.017	13	40.019	15	50.019	15	60.017	13	70.013	9	80.007	5
4	30.030	17	40.034	20	50.034	20	60.030	17	70.022	13	80.012	7
5	30.047	21	40.054	23	50.054	23	60.047	21	70.035	16	80.019	8
6	30.068	25	40.077	29	50.077	29	60.068	25	70.051	18	80.027	10
7	30.093	28	40.106	32	50.106	32	60.093	28	70.069	21	80.037	11
8	30.121	33	40.138	37	50.138	37	60.121	33	70.090	24	80.048	13
9	30.154	36	40.175	41	50.175	41	60.154	36	70.114	27	80.061	14
10	30.190	40	40.216	46	50.216	45	60.190	40	70.141	29	80.075	16
11	30.230	44	40.262	50	50.261	51	60.230	44	70.170	33	80.091	17
12	30.274	49	40.312	54	50.312	54	60.274	48	70.203	35	80.108	19
13	30.323	52	40.366	60	50.366	59	60.322	51	70.238	39	80.127	20
14	30.375	56	40.426	63	50.425	64	60.373	56	70.277	41	80.147	22
15	30.431	60	40.489	69	50.489	68	60.429	60	70.318	44	80.169	24
16	30.491	65	40.558	73	50.557	73	60.489	64	70.362	48	80.193	25
17	30.556	68	40.631	78	50.630	77	60.553	67	70.410	50	80.218	26
18	30.624	73	40.709	82	50.707	82	60.620	72	70.460	53	80.244	29
19	30.697	78	40.791	87	50.789	87	60.692	77	70.513	56	80.273	29
20	30.775	81	40.878	93	50.876	92	60.769	80	70.569	60	80.302	32
21	30.856	86	40.971	97	50.968	96	60.849	84	70.629	62	80.334	33
22	30.942	91	41.068	102	51.064	102	60.933	89	70.691	65	80.367	35
23	31.033	95	41.170	108	51.166	107	61.022	93	70.756	69	80.402	36
24	31.128	99	41.278	112	51.273	111	61.115	97	70.825	72	80.438	38
25	31.227	105	41.390	118	51.384	117	61.212	102	70.897	75	80.476	40
26	31.332	109	41.508	123	51.501	122	61.314	107	70.972	78	80.516	42
27	31.441	114	41.631	129	51.623	127	61.421	110	71.050	82	80.558	43
28	31.555	120	41.760	134	51.750	133	61.531	116	71.132	85	80.601	45
29	31.675	124	41.894	140	51.883	138	61.647	120	71.217	88	80.646	46
30	31.799	130	42.034	145	52.021	144	61.767	125	71.305	92	80.692	49
31	31.929	135	42.179	152	52.165	149	61.892	129	71.397	95	80.741	50
32	32.064	140	42.331	157	52.314	155	62.021	135	71.492	99	80.791	53
33	32.204	146	42.488	164	52.469	161	62.156	140	71.591	103	80.844	54
34	32.350	152	42.652	170	52.630	167	62.296	144	71.694	106	80.898	56
35	32.502	157	42.822	176	52.797	173	62.440	150	71.800	109	80.954	57
36	32.659	164	42.998	183	52.970	180	62.590	155	71.909	114	81.011	60
37	32.823	170	43.181	189	53.150	186	62.745	160	72.023	117	81.071	62
38	32.993	177	43.370	197	53.336	192	62.905	166	72.140	121	81.133	64
39	33.170	182	43.567	203	53.528	199	63.071	172	72.261	125	81.197	66
40	33.352	190	43.770	211	53.727	206	63.243	177	72.386	130	81.263	68
41	33.542	197	43.981	218	53.933	213	63.420	183	72.516	133	81.331	70
42	33.739	204	44.199	226	54.146	220	63.603	189	72.649	137	81.401	72
43	33.943	211	44.425	234	54.366	227	63.792	195	72.786	142	81.473	75
44	34.154	219	44.659	242	54.593	235	63.987	201	72.928	146	81.548	76
45	34.373	227	44.901	251	54.828	243	64.188	208	73.074	151	81.624	79

	$n = 5$								$n = 9$			
Θ	am $(\frac{1}{5}K)$	Δ	am $(\frac{2}{5}K)$	Δ	am $(\frac{3}{5}K)$	Δ	am $(\frac{4}{5}K)$	Δ	am $(\frac{1}{9}K)$	Δ	am $(\frac{2}{9}K)$	Δ
		153		237		224		133		90		166
45	21.010	159	40.762	245	58.636	232	74.806	138	11.762	94	23.285	173
46	21.169	164	41.007	253	58.868	239	74.944	141	11.856	97	23.458	179
47	21.333	171	41.260	263	59.107	247	75.085	146	11.953	100	23.637	186
48	21.504	178	41.523	272	59.354	255	75.231	150	12.053	105	23.823	193
49	21.682	184	41.795	281	59.609	264	75.381	155	12.158	109	24.016	201
50	21.866		42.076		59.873		75.536	159	12.267	113	24.217	208
		191		292		271						
51	22.057	199	42.368	301	60.144	281	75.695	164	12.380	118	24.425	216
52	22.256	206	42.669	313	60.425	289	75.859	168	12.498	122	24.641	225
53	22.462	215	42.982	324	60.714	299	76.027	174	12.620	128	24.866	233
54	22.677	223	43.306	335	61.013	308	76.201	179	12.748	132	25.099	242
55	22.900	233	43.641	348	61.321	319	76.380	184	12.880	138	25.341	253
56	23.133	241	43.989	361	61.640	329	76.564	190	13.018	144	25.594	262
57	23.374	252	44.350	374	61.969	339	76.754	195	13.162	150	25.856	273
58	23.626	262	44.724	387	62.308	351	76.949	201	13.312	156	26.129	285
59	23.888	273	45.111	403	62.659	362	77.150	208	13.468	164	26.414	296
60	24.161	286	45.514	418	63.021	375	77.358	213	13.632	170	26.710	309
61	24.447	298	45.932	435	63.396	387	77.571	220	13.802	179	27.019	323
62	24.745	311	46.367	452	63.783	401	77.791	227	13.981	186	27.342	337
63	25.056	325	46.819	470	64.184	414	78.018	233	14.167	196	27.679	352
64	25.381	341	47.289	489	64.598	429	78.251	241	14.363	205	28.031	369
65	25.722	357	47.778	510	65.027	445	78.492	249	14.568	215	28.400	386
66	26.079	375	48.288	532	65.472	461	78.741	257	14.783	227	28.786	406
67	26.454	395	48.820	555	65.933	477	78.998	265	15.010	238	29.192	425
68	26.849	415	49.375	580	66.410	496	79.263	274	15.248	252	29.617	448
69	27.264	437	49.955	607	66.906	515	79.537	283	15.500	266	30.065	472
70	27.701	462	50.562	636	67.421	536	79.820	293	15.766	282	30.537	498
71	28.163	489	51.198	668	67.957	557	80.113	303	16.048	299	31.035	526
72	28.652	520	51.866	701	68.514	581	80.416	314	16.347	318	31.561	559
73	29.172	552	52.567	739	69.095	607	80.730	327	16.665	340	32.120	593
74	29.724	589	53.306	780	69.702	633	81.057	338	17.005	364	32.713	633
75	30.313	631	54.086	825	70.335	663	81.395	352	17.369	391	33.346	676
76	30.944	679	54.911	876	70.998	696	81.747	367	17.760	422	34.022	726
77	31.623	732	55.787	932	71.694	731	82.114	382	18.182	458	34.748	783
78	32.355	795	56.719	996	72.425	771	82.496	400	18.640	499	35.531	849
79	33.150	868	57.715	1069	73.196	815	82.896	419	19.139	549	36.380	925
80	34.018	956	58.784	1154	74.011	865	83.315	440	19.688	609	37.305	1016
81	34.974	1062	59.938	1254	74.876	922	83.755	464	20.297	681	38.321	1127
82	36.036	1194	61.192	1374	75.798	990	84.219	490	20.978	773	39.448	1263
83	37.230	1362	62.566	1522	76.788	1070	84.709	522	21.751	891	40.711	1436
84	38.592	1587	64.088	1711	77.858	1167	85.231	560	22.642	1052	42.147	1667
85	40.179	1901	65.799	1963	79.025	1293	85.791	605	23.694	1280	43.814	1988
86	42.080	2379	67.762	2323	80.318	1462	86.396	664	24.974	1638	45.802	2472
87	44.459	3206	70.085	2900	81.780	1714	87.060	746	26.612	2275	48.274	3303
88	47.665	5066	72.985	4056	83.494	2169	87.806	880	28.887	3784	51.577	5147
89	52.731		77.041		85.663		88.686		32.671		56.724	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 9$

Θ	am $(\frac{3}{9}K)$	Δ	am $(\frac{4}{9}K)$	Δ	am $(\frac{5}{9}K)$	Δ	am $(\frac{6}{9}K)$	Δ	am $(\frac{7}{9}K)$	Δ	am $(\frac{8}{9}K)$	Δ
		219		242		235		201		146		76
45	34.373	227	44.901	251	54.828	243	64.188	208	73.074	151	81.624	79
46	34.600	235	45.152	259	55.071	251	64.396	214	73.225	155	81.703	82
47	34.835	244	45.411	268	55.322	259	64.610	221	73.380	160	81.785	84
48	35.079	253	45.679	278	55.581	268	64.831	228	73.540	165	81.869	86
49	35.332	262	45.957	287	55.849	277	65.059	235	73.705	170	81.955	89
50	35.594	271	46.244	297	56.126	285	65.294	242	73.875	175	82.044	91
51	35.865	282	46.541	307	56.411	295	65.536	250	74.050	180	82.135	94
52	36.147	291	46.848	318	56.706	305	65.786	258	74.230	185	82.229	97
53	36.438	303	47.166	330	57.011	315	66.044	265	74.415	191	82.326	99
54	36.741	314	47.496	341	57.326	325	66.309	274	74.606	197	82.425	103
55	37.055	326	47.837	353	57.651	336	66.583	283	74.803	203	82.528	105
56	37.381	338	48.190	365	57.987	347	66.866	291	75.006	208	82.633	109
57	37.719	352	48.555	379	58.334	359	67.157	301	75.214	215	82.742	111
58	38.071	365	48.934	393	58.693	371	67.458	310	75.429	221	82.853	115
59	38.436	380	49.327	407	59.064	383	67.768	320	75.650	228	82.968	118
60	38.816	395	49.734	422	59.447	397	68.088	331	75.878	235	83.086	122
61	39.211	411	50.156	438	59.844	411	68.419	341	76.113	243	83.208	125
62	39.622	428	50.594	455	60.255	425	68.760	352	76.356	249	83.333	129
63	40.050	447	51.049	473	60.680	441	69.112	364	76.605	258	83.462	133
64	40.497	465	51.522	492	61.121	457	69.476	377	76.863	265	83.595	137
65	40.962	487	52.014	512	61.578	473	69.853	389	77.128	275	83.732	141
66	41.449	508	52.526	532	62.051	492	70.242	402	77.403	283	83.873	146
67	41.957	532	53.058	555	62.543	510	70.644	417	77.686	292	84.019	150
68	42.489	557	53.613	580	63.053	531	71.061	432	77.978	302	84.169	155
69	43.046	585	54.193	605	63.584	552	71.493	448	78.280	313	84.324	160
70	43.631	614	54.798	633	64.136	574	71.941	465	78.593	324	84.484	166
71	44.245	647	55.431	662	64.710	599	72.406	483	78.917	335	84.650	171
72	44.892	682	56.093	696	65.309	626	72.889	502	79.252	347	84.821	177
73	45.574	721	56.789	730	65.935	653	73.391	522	79.599	361	84.998	184
74	46.295	764	57.519	769	66.588	685	73.913	545	79.960	375	85.182	190
75	47.059	811	58.288	812	67.273	718	74.458	568	80.335	390	85.372	197
76	47.870	865	59.100	858	67.991	754	75.026	595	80.725	406	85.569	206
77	48.735	925	59.958	912	68.745	796	75.621	623	81.131	424	85.775	213
78	49.660	993	60.870	970	69.541	840	76.244	654	81.555	443	85.988	223
79	50.653	1073	61.840	1038	70.381	892	76.898	690	81.998	465	86.211	233
80	51.726	1166	62.878	1115	71.273	949	77.588	729	82.463	489	86.444	245
81	52.892	1276	63.993	1207	72.222	1016	78.317	773	82.952	515	86.689	256
82	54.168	1411	65.200	1315	73.238	1094	79.090	826	83.467	547	86.945	271
83	55.579	1578	66.515	1448	74.332	1189	79.916	886	84.014	582	87.216	287
84	57.157	1794	67.963	1615	75.521	1304	80.802	961	84.596	624	87.503	307
85	58.951	2088	69.578	1837	76.825	1455	81.763	1053	85.220	677	87.810	329
86	61.039	2515	71.415	2150	78.280	1659	82.816	1177	85.897	744	88.139	359
87	63.554	3219	73.565	2642	79.939	1970	83.993	1358	86.641	840	88.498	399
88	66.773	4679	76.207	3607	81.909	2543	85.351	1671	87.481	996	88.897	462
89	71.452		79.814		84.452		87.022		88.477		89.359	
90	90.000		90.000		90.000		90.000		90.000		90.000	

	$n = 6$										$n = 8$	
Θ	am $(\frac{1}{6}K)$	Δ	am $(\frac{2}{6}K)$	Δ	am $(\frac{3}{6}K)$	Δ	am $(\frac{4}{6}K)$	Δ	am $(\frac{5}{6}K)$	Δ	am $(\frac{1}{8}K)$	Δ
0	15.000	1	30.000	2	45.000	2	60.000	2	75.000	1	11.250	1
1	15.001	3	30.002	6	45.002	7	60.002	6	75.001	3	11.251	2
2	15.004	6	30.008	9	45.009	11	60.008	9	75.004	6	11.253	5
3	15.010	7	30.017	13	45.020	15	60.017	13	75.010	7	11.258	5
4	15.017	10	30.030	17	45.035	20	60.030	17	75.017	10	11.263	8
5	15.027	12	30.047	21	45.055	24	60.047	21	75.027	12	11.271	9
6	15.039	15	30.068	25	45.079	28	60.068	25	75.039	15	11.280	11
7	15.054	16	30.093	28	45.107	33	60.093	28	75.054	16	11.291	13
8	15.070	19	30.121	33	45.140	37	60.121	33	75.070	19	11.304	14
9	15.089	21	30.154	36	45.177	42	60.154	36	75.089	20	11.318	16
10	15.110	23	30.190	40	45.219	47	60.190	40	75.109	24	11.334	18
11	15.133	26	30.230	44	45.266	50	60.230	44	75.133	25	11.352	19
12	15.159	27	30.274	49	45.316	56	60.274	48	75.158	27	11.371	22
13	15.186	31	30.323	52	45.372	60	60.322	51	75.185	30	11.393	23
14	15.217	32	30.375	56	45.432	65	60.373	56	75.215	32	11.416	25
15	15.249	35	30.431	60	45.497	69	60.429	60	75.247	35	11.441	27
16	15.284	38	30.491	65	45.566	74	60.489	64	75.282	36	11.468	28
17	15.322	39	30.556	68	45.640	79	60.553	67	75.318	39	11.496	31
18	15.361	43	30.624	73	45.719	83	60.620	72	75.357	42	11.527	32
19	15.404	44	30.697	78	45.802	89	60.692	77	75.399	43	11.559	34
20	15.448	48	30.775	81	45.891	93	60.769	80	75.442	47	11.593	37
21	15.496	50	30.856	86	45.984	99	60.849	84	75.489	48	11.630	38
22	15.546	52	30.942	91	46.083	103	60.933	89	75.537	51	11.668	40
23	15.598	56	31.033	95	46.186	109	61.022	93	75.588	53	11.708	43
24	15.654	58	31.128	99	46.295	114	61.115	97	75.641	56	11.751	44
25	15.712	61	31.227	105	46.409	119	61.212	102	75.697	58	11.795	47
26	15.773	64	31.332	109	46.528	124	61.314	107	75.755	61	11.842	49
27	15.837	66	31.441	114	46.652	130	61.421	110	75.816	63	11.891	51
28	15.903	70	31.555	120	46.782	135	61.531	116	75.879	66	11.942	53
29	15.973	73	31.675	124	46.917	142	61.647	120	75.945	69	11.995	56
30	16.046	76	31.799	130	47.059	146	61.767	125	76.014	71	12.051	58
31	16.122	79	31.929	135	47.205	153	61.892	129	76.085	74	12.109	61
32	16.201	82	32.064	140	47.358	159	62.021	135	76.159	76	12.170	63
33	16.283	86	32.204	146	47.517	165	62.156	140	76.235	79	12.233	66
34	16.369	89	32.350	152	47.682	171	62.296	144	76.314	82	12.299	69
35	16.458	93	32.502	157	47.853	177	62.440	150	76.396	85	12.368	71
36	16.551	96	32.659	164	48.030	184	62.590	155	76.481	88	12.439	74
37	16.647	101	32.823	170	48.214	191	62.745	160	76.569	91	12.513	77
38	16.748	104	32.993	177	48.405	197	62.905	166	76.660	94	12.590	80
39	16.852	108	33.170	182	48.602	204	63.071	172	76.754	96	12.670	83
40	16.960	113	33.352	190	48.806	212	63.243	177	76.850	100	12.753	87
41	17.073	116	33.542	197	49.018	219	63.420	183	76.950	103	12.840	90
42	17.189	122	33.739	204	49.237	226	63.603	189	77.053	106	12.930	93
43	17.311	126	33.943	211	49.463	234	63.792	195	77.159	110	13.023	97
44	17.437	130	34.154	219	49.697	243	63.987	201	77.269	113	13.120	100
45	17.567	136	34.373	227	49.940	250	64.188	208	77.382	116	13.220	105

$n = 8$

Θ	am $(\frac{2}{8}K)$	Δ	am $(\frac{3}{8}K)$	Δ	am $(\frac{4}{8}K)$	Δ	am $(\frac{5}{8}K)$	Δ	am $(\frac{6}{8}K)$	Δ	am $(\frac{7}{8}K)$	Δ
0	22.500	2	33.750	2	45.000	2	56.250	2	67.500	2	78.750	1
1	22.502	4	33.752	6	45.002	7	56.252	6	67.502	4	78.751	2
2	22.506	8	33.758	10	45.009	11	56.258	10	67.506	8	78.753	5
3	22.514	11	33.768	14	45.020	15	56.268	14	67.514	11	78.758	5
4	22.525	14	33.782	18	45.035	20	56.282	18	67.525	14	78.763	8
5	22.539	17	33.800	23	45.055	24	56.300	23	67.539	17	78.771	9
6	22.556	20	33.823	26	45.079	28	56.323	26	67.556	20	78.780	11
7	22.576	23	33.849	30	45.107	33	56.349	30	67.576	23	78.791	13
8	22.599	27	33.879	35	45.140	37	56.379	35	67.599	26	78.804	14
9	22.626	29	33.914	39	45.177	42	56.414	38	67.625	30	78.818	16
10	22.655	33	33.953	43	45.219	47	56.452	43	67.655	33	78.834	17
11	22.688	36	33.996	47	45.266	50	56.495	47	67.688	35	78.851	20
12	22.724	40	34.043	51	45.316	56	56.542	51	67.723	39	78.871	21
13	22.764	42	34.094	56	45.372	60	56.593	55	67.762	43	78.892	23
14	22.806	46	34.150	60	45.432	65	56.648	60	67.805	45	78.915	24
15	22.852	50	34.210	64	45.497	69	56.708	64	67.850	49	78.939	27
16	22.902	52	34.274	68	45.566	74	56.772	68	67.899	52	78.966	28
17	22.954	56	34.342	74	45.640	79	56.840	72	67.951	55	78.994	29
18	23.010	60	34.416	77	45.719	83	56.912	77	68.006	59	79.023	32
19	23.070	63	34.493	82	45.802	89	56.989	82	68.065	61	79.055	33
20	23.133	67	34.575	87	45.891	93	57.071	85	68.126	66	79.088	36
21	23.200	71	34.662	92	45.984	99	57.156	91	68.192	69	79.124	37
22	23.271	74	34.754	96	46.083	103	57.247	95	68.261	72	79.161	39
23	23.345	78	34.850	101	46.186	109	57.342	99	68.333	75	79.200	40
24	23.423	82	34.951	107	46.295	114	57.441	104	68.408	79	79.240	43
25	23.505	86	35.058	111	46.409	119	57.545	109	68.487	83	79.283	45
26	23.591	89	35.169	116	46.528	124	57.654	114	68.570	86	79.328	46
27	23.680	94	35.285	121	46.652	130	57.768	119	68.656	90	79.374	48
28	23.774	98	35.406	127	46.782	135	57.887	123	68.746	94	79.422	51
29	23.872	102	35.533	132	46.917	142	58.010	129	68.840	97	79.473	52
30	23.974	107	35.665	138	47.059	146	58.139	134	68.937	102	79.525	54
31	24.081	111	35.803	143	47.205	153	58.273	139	69.039	105	79.579	57
32	24.192	116	35.946	149	47.358	159	58.412	144	69.144	109	79.636	58
33	24.308	120	36.095	155	47.517	165	58.556	150	69.253	112	79.694	61
34	24.428	126	36.250	161	47.682	171	58.706	155	69.365	117	79.755	62
35	24.554	130	36.411	167	47.853	177	58.861	160	69.482	121	79.817	65
36	24.684	135	36.578	174	48.030	184	59.021	167	69.603	126	79.882	67
37	24.819	140	36.752	180	48.214	191	59.188	172	69.729	129	79.949	69
38	24.959	146	36.932	186	48.405	197	59.360	178	69.858	134	80.018	72
39	25.105	152	37.118	194	48.602	204	59.538	185	69.992	138	80.090	74
40	25.257	157	37.312	201	48.806	212	59.723	190	70.130	143	80.164	76
41	25.414	163	37.513	208	49.018	219	59.913	197	70.273	147	80.240	78
42	25.577	169	37.721	215	49.237	226	60.110	203	70.420	152	80.318	81
43	25.746	176	37.936	224	49.463	234	60.313	210	70.572	157	80.399	84
44	25.922	182	38.160	231	49.697	243	60.523	217	70.729	161	80.483	86
45	26.104	189	38.391	239	49.940	250	60.740	224	70.890	167	80.569	88

	$n = 6$										$n = 8$	
Θ	am $(\frac{1}{6}K)$	Δ	am $(\frac{2}{6}K)$	Δ	am $(\frac{3}{6}K)$	Δ	am $(\frac{4}{6}K)$	Δ	am $(\frac{5}{6}K)$	Δ	am $(\frac{1}{8}K)$	Δ
		130		219		243		201		113		100
45	17.567	136	34.373	227	49.940	250	64.188	208	77.382	116	13.220	105
46	17.703	141	34.600	235	50.190	259	64.396	214	77.498	120	13.325	108
47	17.844	146	34.835	244	50.449	268	64.610	221	77.618	123	13.433	113
48	17.990	152	35.079	253	50.717	276	64.831	228	77.741	127	13.546	117
49	18.142	158	35.332	262	50.993	286	65.059	235	77.868	131	13.663	121
50	18.300	164	35.594	271	51.279	296	65.294	242	77.999	134	13.784	127
51	18.464	170	35.865	282	51.575	306	65.536	250	78.133	139	13.911	131
52	18.634	177	36.147	291	51.881	316	65.786	258	78.272	143	14.042	137
53	18.811	184	36.438	303	52.197	327	66.044	265	78.415	146	14.179	142
54	18.995	192	36.741	314	52.524	338	66.309	274	78.561	152	14.321	148
55	19.187	199	37.055	326	52.862	349	66.583	283	78.713	155	14.469	154
56	19.386	208	37.381	338	53.211	362	66.866	291	78.868	160	14.623	160
57	19.594	216	37.719	352	53.573	374	67.157	301	79.028	165	14.783	167
58	19.810	225	38.071	365	53.947	387	67.458	310	79.193	170	14.950	175
59	20.035	236	38.436	380	54.334	402	67.768	320	79.363	174	15.125	182
60	20.271	245	38.816	395	54.736	415	68.088	331	79.537	180	15.307	190
61	20.516	257	39.211	411	55.151	431	68.419	341	79.717	186	15.497	199
62	20.773	268	39.622	428	55.582	446	68.760	352	79.903	191	15.696	208
63	21.041	281	40.050	447	56.028	464	69.112	364	80.094	197	15.904	218
64	21.322	294	40.497	465	56.492	480	69.476	377	80.291	202	16.122	229
65	21.616	308	40.962	487	56.972	500	69.853	389	80.493	210	16.351	240
66	21.924	325	41.449	508	57.472	519	70.242	402	80.703	216	16.591	252
67	22.249	341	41.957	532	57.991	540	70.644	417	80.919	222	16.843	266
68	22.590	359	42.489	557	58.531	563	71.061	432	81.141	231	17.109	280
69	22.949	379	43.046	585	59.094	586	71.493	448	81.372	238	17.389	296
70	23.328	401	43.631	614	59.680	612	71.941	465	81.610	245	17.685	313
71	23.729	426	44.245	647	60.292	639	72.406	483	81.855	255	17.998	333
72	24.155	451	44.892	682	60.931	668	72.889	502	82.110	264	18.331	354
73	24.606	481	45.574	721	61.599	701	73.391	522	82.374	273	18.685	377
74	25.087	515	46.295	764	62.300	736	73.913	545	82.647	284	19.062	404
75	25.602	551	47.059	811	63.036	773	74.458	568	82.931	294	19.466	434
76	26.153	594	47.870	865	63.809	816	75.026	595	83.225	307	19.900	469
77	26.747	642	48.735	925	64.625	863	75.621	623	83.532	320	20.369	507
78	27.389	699	49.660	993	65.488	915	76.244	654	83.852	333	20.876	554
79	28.088	766	50.653	1073	66.403	975	76.898	690	84.185	350	21.430	608
80	28.854	845	51.726	1166	67.378	1042	77.588	729	84.535	366	22.038	673
81	29.699	941	52.892	1276	68.420	1122	78.317	773	84.901	386	22.711	753
82	30.640	1063	54.168	1411	69.542	1214	79.090	826	85.287	408	23.464	854
83	31.703	1218	55.579	1578	70.756	1328	79.916	886	85.695	433	24.318	982
84	32.921	1426	57.157	1794	72.084	1468	80.802	961	86.128	464	25.300	1157
85	34.347	1721	58.951	2088	73.552	1653	81.763	1053	86.592	499	26.457	1407
86	36.068	2171	61.039	2515	75.205	1909	82.816	1177	87.091	547	27.864	1793
87	38.239	2964	63.554	3219	77.114	2304	83.993	1358	87.638	612	29.657	2481
88	41.203	4781	66.773	4679	79.418	3056	85.351	1671	88.250	715	32.138	4098
89	45.984		71.452		82.474		87.022		88.965		36.236	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 8$

Θ	am $(\frac{3}{8}K)$	Δ	am $(\frac{3}{8}K)$	Δ	am $(\frac{4}{8}K)$	Δ	am $(\frac{5}{8}K)$	Δ	am $(\frac{6}{8}K)$	Δ	am $(\frac{7}{8}K)$	Δ
		182		231		243		217		161		86
45	26.104	189	38.391	239	49.940	250	60.740	224	70.890	167	80.569	88
46	26.293	196	38.630	248	50.190	259	60.964	230	71.057	172	80.657	91
47	26.489	204	38.878	257	50.449	268	61.194	239	71.229	177	80.748	94
48	26.693	211	39.135	267	50.717	276	61.433	246	71.406	182	80.842	97
49	26.904	219	39.402	275	50.993	286	61.679	253	71.588	188	80.939	99
50	27.123	227	39.677	286	51.279	296	61.932	262	71.776	193	81.038	103
51	27.350	236	39.963	296	51.575	306	62.194	270	71.969	200	81.141	105
52	27.586	245	40.259	306	51.881	316	62.464	279	72.169	205	81.246	109
53	27.831	254	40.565	318	52.197	327	62.743	288	72.374	212	81.355	111
54	28.085	265	40.883	329	52.524	338	63.031	296	72.586	218	81.466	115
55	28.350	275	41.212	342	52.862	349	63.327	307	72.804	224	81.581	118
56	28.625	285	41.554	354	53.211	362	63.634	316	73.028	231	81.699	122
57	28.910	298	41.908	368	53.573	374	63.950	326	73.259	239	81.821	125
58	29.208	309	42.276	382	53.947	387	64.276	337	73.498	245	81.946	129
59	29.517	323	42.658	396	54.334	402	64.613	348	73.743	253	82.075	132
60	29.840	336	43.054	412	54.736	415	64.961	359	73.996	261	82.207	137
61	30.176	350	43.466	428	55.151	431	65.320	372	74.257	269	82.344	141
62	30.526	366	43.894	446	55.582	446	65.692	384	74.526	278	82.485	144
63	30.892	382	44.340	464	56.028	464	66.076	397	74.804	286	82.629	149
64	31.274	400	44.804	483	56.492	480	66.473	410	75.090	295	82.778	154
65	31.674	419	45.287	505	56.972	500	66.883	426	75.385	306	82.932	159
66	32.093	438	45.792	526	57.472	519	67.309	440	75.691	315	83.091	163
67	32.531	460	46.318	550	57.991	540	67.749	457	76.006	325	83.254	169
68	32.991	484	46.868	575	58.531	563	68.206	473	76.331	337	83.423	174
69	33.475	509	47.443	602	59.094	586	68.679	491	76.668	349	83.597	179
70	33.984	537	48.045	632	59.680	612	69.170	511	77.017	361	83.776	186
71	34.521	567	48.677	664	60.292	639	69.681	531	77.378	374	83.962	192
72	35.088	601	49.341	699	60.931	668	70.212	553	77.752	388	84.154	199
73	35.689	637	50.040	736	61.599	701	70.765	576	78.140	403	84.353	206
74	36.326	679	50.776	779	62.300	736	71.341	602	78.543	419	84.559	214
75	37.005	724	51.555	825	63.036	773	71.943	629	78.962	436	84.773	222
76	37.729	777	52.380	877	63.809	816	72.572	659	79.398	455	84.995	231
77	38.506	835	53.257	935	64.625	863	73.231	692	79.853	475	85.226	240
78	39.341	904	54.192	1002	65.488	915	73.923	729	80.328	498	85.466	251
79	40.245	983	55.194	1077	66.403	975	74.652	769	80.826	522	85.717	262
80	41.228	1077	56.271	1166	67.378	1042	75.421	815	81.348	549	85.979	275
81	42.305	1190	57.437	1270	68.420	1122	76.236	868	81.897	581	86.254	289
82	43.495	1329	58.707	1396	69.542	1214	77.104	928	82.478	616	86.543	305
83	44.824	1506	60.103	1552	70.756	1328	78.032	1002	83.094	657	86.848	323
84	46.330	1739	61.655	1753	72.084	1468	79.034	1090	83.751	707	87.171	345
85	48.069	2061	63.408	2020	73.552	1653	80.124	1202	84.458	768	87.516	372
86	50.130	2543	65.428	2408	75.205	1909	81.326	1353	85.226	848	87.888	405
87	52.673	3361	67.836	3032	77.114	2304	82.679	1576	86.074	960	88.293	451
88	56.034	5146	70.868	4301	79.418	3056	84.255	1974	87.034	1149	88.744	523
89	61.180		75.169		82.474		86.229		88.183		89.267	
90	90.000		90.000		90.000		90.000		90.000		90.000	

$n = 7$

Θ	am $(\frac{1}{7}K)$	Δ	am $(\frac{2}{7}K)$	Δ	am $(\frac{3}{7}K)$	Δ	am $(\frac{4}{7}K)$	Δ	am $(\frac{5}{7}K)$	Δ	am $(\frac{6}{7}K)$	Δ
0	12.857	1	25.714	2	38.571	3	51.429	2	64.286	1	77.143	1
1	12.858	3	25.716	5	38.574	6	51.431	6	64.287	6	77.144	3
2	12.861	5	25.721	9	38.580	11	51.437	11	64.293	8	77.147	4
3	12.866	6	25.730	12	38.591	14	51.448	15	64.301	12	77.151	7
4	12.872	9	25.742	15	38.605	20	51.463	19	64.313	15	77.158	9
5	12.881	10	25.757	19	38.625	23	51.482	23	64.328	19	77.167	10
6	12.891	13	25.776	22	38.648	28	51.505	28	64.347	22	77.177	12
7	12.904	14	25.798	26	38.676	32	51.533	32	64.369	26	77.189	15
8	12.918	16	25.824	29	38.708	36	51.565	37	64.395	29	77.204	16
9	12.934	18	25.853	33	38.744	41	51.602	40	64.424	33	77.220	18
10	12.952	21	25.886	36	38.785	46	51.642	45	64.457	36	77.238	20
11	12.973	22	25.922	40	38.831	49	51.687	50	64.493	40	77.258	22
12	12.995	24	25.962	44	38.880	54	51.737	54	64.533	43	77.280	24
13	13.019	26	26.006	47	38.934	59	51.791	58	64.576	47	77.304	26
14	13.045	28	26.053	51	38.993	63	51.849	63	64.623	50	77.330	27
15	13.073	31	26.104	54	39.056	68	51.912	68	64.673	54	77.357	30
16	13.104	32	26.158	58	39.124	72	51.980	72	64.727	57	77.387	32
17	13.136	35	26.216	62	39.196	77	52.052	76	64.784	61	77.419	34
18	13.171	36	26.278	66	39.273	82	52.128	82	64.845	65	77.453	36
19	13.207	39	26.344	70	39.355	86	52.210	86	64.910	69	77.489	38
20	13.246	42	26.414	74	39.441	92	52.296	90	64.979	72	77.527	40
21	13.288	43	26.488	78	39.533	96	52.386	96	65.051	76	77.567	42
22	13.331	46	26.566	82	39.629	102	52.482	100	65.127	80	77.609	44
23	13.377	48	26.648	86	39.731	106	52.582	106	65.207	84	77.653	46
24	13.425	50	26.734	90	39.837	111	52.688	110	65.291	88	77.699	48
25	13.475	53	26.824	95	39.948	117	52.798	116	65.379	91	77.747	51
26	13.528	55	26.919	99	40.065	122	52.914	120	65.470	96	77.798	53
27	13.583	58	27.018	103	40.187	128	53.034	126	65.566	100	77.851	54
28	13.641	61	27.121	108	40.315	133	53.160	131	65.666	103	77.905	58
29	13.702	63	27.229	113	40.448	138	53.291	137	65.769	108	77.963	59
30	13.765	66	27.342	118	40.586	145	53.428	142	65.877	113	78.022	62
31	13.831	69	27.460	122	40.731	150	53.570	147	65.990	116	78.084	64
32	13.900	71	27.582	128	40.881	156	53.717	153	66.106	121	78.148	66
33	13.971	75	27.710	132	41.037	163	53.870	159	66.227	125	78.214	69
34	14.046	78	27.842	138	41.200	168	54.029	165	66.352	130	78.283	71
35	14.124	80	27.980	143	41.368	175	54.194	171	66.482	134	78.354	73
36	14.204	84	28.123	149	41.543	182	54.365	178	66.616	140	78.427	76
37	14.288	87	28.272	155	41.725	188	54.543	183	66.756	143	78.503	79
38	14.375	91	28.427	160	41.913	195	54.726	190	66.899	149	78.582	81
39	14.466	94	28.587	167	42.108	202	54.916	196	67.048	154	78.663	84
40	14.560	98	28.754	172	42.310	209	55.112	203	67.202	158	78.747	86
41	14.658	102	28.926	180	42.519	217	55.315	210	67.360	164	78.833	89
42	14.760	105	29.106	186	42.736	225	55.525	217	67.524	169	78.922	92
43	14.865	110	29.292	192	42.961	232	55.742	225	67.693	174	79.014	95
44	14.975	113	29.484	200	43.193	241	55.967	232	67.867	180	79.109	98
45	15.088	119	29.684	208	43.434	249	56.199	239	68.047	186	79.207	100

$n = 7$

Θ	am $(\frac{1}{7}K)$	Δ	am $(\frac{2}{7}K)$	Δ	am $(\frac{3}{7}K)$	Δ	am $(\frac{4}{7}K)$	Δ	am $(\frac{5}{7}K)$	Δ	am $(\frac{6}{7}K)$	Δ
		113		200		241		232		180		98
45	15.088	119	29.684	208	43.434	249	56.199	239	68.047	186	79.207	100
46	15.207	122	29.892	215	43.683	258	56.438	247	68.233	191	79.307	104
47	15.329	128	30.107	222	43.941	267	56.685	256	68.424	197	79.411	107
48	15.457	132	30.329	232	44.208	276	56.941	263	68.621	203	79.518	109
49	15.589	138	30.561	239	44.484	286	57.204	273	68.824	210	79.627	114
50	15.727	142	30.800	249	44.770	295	57.477	281	69.034	216	79.741	116
51	15.869	149	31.049	258	45.065	307	57.758	290	69.250	222	79.857	120
52	16.018	154	31.307	268	45.372	316	58.048	300	69.472	230	79.977	123
53	16.172	161	31.575	278	45.688	329	58.348	310	69.702	236	80.100	127
54	16.333	167	31.853	289	46.017	339	58.658	319	69.938	243	80.227	130
55	16.500	174	32.142	300	46.356	352	58.977	331	70.181	251	80.357	135
56	16.674	181	32.442	312	46.708	365	59.308	341	70.432	259	80.492	138
57	16.855	189	32.754	324	47.073	378	59.649	353	70.691	267	80.630	142
58	17.044	197	33.078	337	47.451	392	60.002	364	70.958	275	80.772	147
59	17.241	206	33.415	351	47.843	406	60.366	377	71.233	283	80.919	151
60	17.447	214	33.766	365	48.249	422	60.743	390	71.516	292	81.070	155
61	17.661	224	34.131	381	48.671	438	61.133	403	71.808	302	81.225	160
62	17.885	235	34.512	397	49.109	455	61.536	417	72.110	311	81.385	165
63	18.120	246	34.909	414	49.564	473	61.953	432	72.421	322	81.550	170
64	18.366	257	35.323	433	50.037	492	62.385	448	72.743	331	81.720	174
65	18.623	271	35.756	453	50.529	512	62.833	464	73.074	343	81.894	181
66	18.894	284	36.209	474	51.041	534	63.297	481	73.417	355	82.075	186
67	19.178	299	36.683	497	51.575	556	63.778	500	73.772	366	82.261	192
68	19.477	315	37.180	522	52.131	581	64.278	519	74.138	380	82.453	198
69	19.792	333	37.702	548	52.712	608	64.797	539	74.518	392	82.651	205
70	20.125	353	38.250	577	53.320	635	65.336	562	74.910	408	82.856	212
71	20.478	374	38.827	609	53.955	666	65.898	585	75.318	422	83.068	219
72	20.852	397	39.436	644	54.621	699	66.483	610	75.740	438	83.287	227
73	21.249	424	40.080	682	55.320	736	67.093	638	76.178	456	83.514	235
74	21.673	453	40.762	724	56.056	774	67.731	667	76.634	475	83.749	244
75	22.126	487	41.486	772	56.830	819	68.398	699	77.109	494	83.993	253
76	22.613	525	42.258	826	57.649	866	69.097	734	77.603	516	84.246	263
77	23.138	568	43.084	886	58.515	921	69.831	774	78.119	540	84.509	275
78	23.706	619	43.970	955	59.436	982	70.605	816	78.659	566	84.784	286
79	24.325	680	44.925	1036	60.418	1051	71.421	865	79.225	595	85.070	300
80	25.005	751	45.961	1131	61.469	1131	72.286	920	79.820	627	85.370	314
81	25.756	839	47.092	1245	62.600	1226	73.206	984	80.447	663	85.684	330
82	26.595	948	48.337	1385	63.826	1339	74.190	1057	81.110	706	86.014	349
83	27.543	1091	49.722	1560	65.165	1477	75.247	1147	81.816	755	86.363	371
84	28.634	1282	51.282	1789	66.642	1653	76.394	1256	82.571	815	86.734	395
85	29.916	1553	53.071	2104	68.295	1884	77.650	1396	83.386	888	87.129	426
86	31.469	1972	55.175	2570	70.179	2215	79.046	1589	84.274	985	87.555	465
87	33.441	2713	57.745	3349	72.394	2736	80.635	1877	85.259	1124	88.020	519
88	36.154	4437	61.094	5013	75.130	3768	82.512	2406	86.383	1361	88.539	604
89	40.591		66.107		78.898		84.918		87.744		89.143	
90	90.000		90.000		90.000		90.000		90.000		90.000	