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Incl. 2-1

k	1	2	3	4	5	6	7
1	0,5896	1,126944	0,815181	32,27211	0,563255	0,845521843	0,533941
2	1,1792	1,270003	0,66452	64,54422	1,126509	0,429814375	0,902917
3	1,7688	1,431222	0,541704	96,81633	1,689764	-0,118686958	0,992932
4	2,3584	1,612907	0,441586	129,0884	2,253018	-0,630519206	0,776174
5	2,948	1,817656	0,359973	161,3605	2,816273	-0,947548565	0,319612
6	3,5376	2,048396	0,293443	193,6327	3,379527	-0,971826812	-0,235696
7	4,1272	2,308428	0,239209	225,9048	3,942782	-0,69585303	-0,718184
8	4,7168	2,601469	0,194998	258,1769	4,506037	-0,204891061	-0,978785
9	5,3064	2,931709	0,158959	290,449	5,069291	0,349373295	-0,936984
10	5,896	3,303872	0,12958	322,7211	5,632546	0,795696566	-0,605695
11	6,4856	3,723279	0,105631	354,9932	6,1958	0,996184358	-0,087274
12	7,0752	4,195926	0,086109	387,2653	6,759055	0,888894704	0,458112
13	7,6648	4,728574	0,070194	419,5374	7,322309	0,506975419	0,861961
14	8,2544	5,328838	0,057221	451,8095	7,885564	-0,031577122	0,999501
15	8,844	6,005302	0,046645	484,0816	8,448819	-0,560373713	0,82824
16	9,4336	6,767638	0,038024	516,3538	9,012073	-0,916039307	0,401089
17	10,0232	7,626749	0,030997	548,6259	9,575328	-0,988688773	-0,149982
18	10,6128	8,594919	0,025268	580,898	10,13858	-0,755876601	-0,654714
19	11,2024	9,685992	0,020598	613,1701	10,70184	-0,289531581	-0,957168
20	11,792	10,91557	0,016791	645,4422	11,26509	0,266266049	-0,9639
21	12,3816	12,30124	0,013688	677,7143	11,82835	0,739799102	-0,672828
22	12,9712	13,8628	0,011158	709,9864	12,3916	0,984766552	-0,173882
23	13,5608	15,6226	0,009096	742,2585	12,95486	0,925484158	0,378786
24	14,1504	17,6058	0,007415	774,5306	13,51811	0,580267591	0,814426
25	14,74	19,84075	0,006044	806,8027	14,08136	0,055773688	0,998443
26	15,3296	22,35941	0,004927	839,0749	14,64462	-0,485951848	0,873986
27	15,9192	25,1978	0,004017	871,347	15,20787	-0,877539493	0,479504
28	16,5088	28,39651	0,003274	903,6191	15,77113	-0,998005771	-0,063123
29	17,0984	32,00128	0,002669	935,8912	16,33438	-0,810131865	-0,586248
30	17,688	36,06365	0,002176	968,1633	16,89764	-0,371962604	-0,928248
31	18,2776	40,64171	0,001774	1000,435	17,46089	0,181126851	-0,98346
32	18,8672	45,80093	0,001446	1032,708	18,02415	0,678256022	-0,734826
33	19,4568	51,61508	0,001179	1064,98	18,5874	0,965833713	-0,259163
34	20,0464	58,1673	0,000961	1097,252	19,15066	0,955010981	0,29657
35	20,636	65,55129	0,000783	1129,524	19,71391	0,649131576	0,760676
36	21,2256	73,87263	0,000638	1161,796	20,27716	0,142698873	0,989766
37	21,8152	83,25032	0,00052	1194,068	20,84042	-0,407821548	0,913062
38	22,4048	93,81844	0,000424	1226,34	21,40367	-0,832342927	0,554261
39	22,9944	105,7281	0,000346	1258,612	21,96693	-0,999706704	0,024218
40	23,584	119,1497	0,000282	1290,884	22,53018	-0,858204782	-0,513307
41	24,1736	134,275	0,00023	1323,157	23,09344	-0,451555076	-0,892243
42	24,7632	151,3204	0,000187	1355,429	23,65669	0,094605423	-0,995515
43	25,3528	170,5296	0,000153	1387,701	24,21995	0,611536979	-0,791216
44	25,9424	192,1773	0,000125	1419,973	24,7832	0,939530324	-0,342466
45	26,532	216,5731	0,000101	1452,245	25,34646	0,977249844	0,212091
46	27,1216	244,0657	8,27E-05	1484,517	25,90971	0,713041855	0,701121
47	27,7112	275,0484	6,74E-05	1516,789	26,47296	0,228535083	0,973536
48	28,3008	309,9641	5,5E-05	1549,061	27,03622	-0,326579046	0,94517
49	28,8904	349,3122	4,48E-05	1581,333	27,59947	-0,780794516	0,624788
50	29,48	393,6553	3,65E-05	1613,605	28,16273	-0,993778592	0,111374
51	30,0696	443,6274	2,98E-05	1645,878	28,72598	-0,899728497	-0,43645
52	30,6592	499,9433	2,43E-05	1678,15	29,28924	-0,527701602	-0,84943
53	31,2488	563,408	1,98E-05	1710,422	29,85249	0,007362034	-0,999973
54	31,8384	634,9293	1,61E-05	1742,694	30,41575	0,540151123	-0,841568
55	32,428	715,5297	1,32E-05	1774,966	30,979	0,906057113	-0,423155
56	33,0176	806,3619	1,07E-05	1807,238	31,54226	0,992031037	0,125994

k	n =	$1,2247^n$	$0,704^n$	$\varphi^n =$	$\frac{\varphi^n}{180^\circ}$	$\cos n\varphi$	$\sin n\varphi$
	05896k	R_1^n	R_2^n	54,7356°			

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8	9	10	11	12	13	14
212,256	3,704566	-0,845672	-0,533703	0,131740138	-0,737787131	0,51839293
424,512	7,409132	0,430322	0,902675	0,415911429	0,743322464	0,273430923
636,768	11,1137	0,117849	-0,993031	-0,053013972	0,558441845	0,979517154
849,024	14,81826	-0,629646	0,776882	-0,647505873	1,166941064	0,454417604
1061,28	18,52283	0,947098	-0,320944	-0,690693752	1,264329895	0,348237577
1273,536	22,2274	-0,972223	-0,234056	-1,137989013	0,576956658	-0,207058411
1485,792	25,93196	0,697265	0,716813	-0,719767141	0,143355109	-0,914672166
1698,048	29,63653	-0,207092	-0,978321	-0,286700149	-1,122206997	-1,177753303
1910,304	33,34109	-0,347001	0,937865	0,484550982	-1,838650678	-1,448022779
2122,56	37,04566	0,79399	-0,60793	1,365882572	-2,30295507	-0,961182224
2334,816	40,75023	-0,99591	0,090354	1,801936316	-2,064835908	-0,167244554
2547,072	44,45479	0,890435	0,45511	1,903205465	-0,84583563	0,94150675
2759,328	48,15936	-0,510123	-0,860102	1,180731565	0,791195779	2,068109031
2971,584	51,86392	-0,027642	0,999618	-0,084925546	2,775033544	2,6344907
3183,84	55,56849	0,556876	-0,830596	-1,669618746	4,163137839	2,506286876
3396,096	59,27306	-0,914226	0,405205	-3,117092839	4,447244784	1,349507138
3608,352	62,97762	0,989394	0,145254	-3,754906668	3,215889494	-0,574187605
3820,608	66,68219	-0,75918	-0,65088	-3,257940563	0,416927038	-2,805384164
4032,864	70,38676	0,294641	0,955608	-1,399165807	-3,220486492	-4,645404871
4245,12	74,09132	0,260842	-0,965382	1,455412796	-6,71989469	-5,252651921
4457,376	77,79589	-0,735813	0,677184	4,5451859	-8,688929964	-4,142941561
4669,632	81,50045	0,983672	-0,17997	6,83130064	-8,026572684	-1,204239744
4881,888	85,20502	-0,927914	-0,372793	7,225015762	-4,276337165	2,960509543
5094,144	88,90959	0,58575	0,810492	5,110208632	2,066448197	7,166304113
5306,4	92,61415	-0,062791	-0,998027	0,553106079	9,348430503	9,907948502
5518,656	96,31872	-0,47955	0,877515	-5,433980019	15,20468055	9,768739671
5730,912	100,0233	0,873874	-0,486152	-11,05427885	17,0980409	6,04220474
5943,168	103,7278	-0,998472	-0,055264	-14,17157629	13,2719836	-0,896142517
6155,424	107,4324	0,814885	0,579623	-12,96154016	3,584150827	-9,381111396
6367,68	111,137	-0,379779	-0,925077	-6,707577281	-10,03225462	-16,7369928
6579,936	114,8415	-0,172548	0,985001	3,680499439	-23,66467468	-19,98561626
6792,192	118,5461	0,671617	-0,740898	15,53286368	-32,36027766	-16,82731381
7004,448	122,2507	-0,963388	0,268113	24,92522498	-31,61455103	-6,688506581
7216,704	125,9552	0,957802	0,287427	27,77566719	-19,14925732	8,625213449
7428,96	129,6598	-0,656586	-0,754251	21,27544969	3,655392792	24,93194749
7641,216	133,3644	0,15271	0,988271	5,270819493	31,28790931	36,55800032
7853,472	137,0689	0,398301	-0,917255	-16,97553311	54,98183822	38,00657521
8065,728	140,7735	-0,826374	0,563122	-39,04473413	65,04445489	25,99983246
8277,984	144,4781	0,999381	-0,035179	-52,84838648	54,12898287	1,280262913
8490,24	148,1826	-0,863923	-0,503623	-51,12753266	20,54700916	-30,58013793
8702,496	151,8872	0,461811	0,886979	-30,31622765	-29,58654896	-59,90308661
8914,752	155,5918	0,082843	-0,996563	7,157873436	-82,47880872	-75,3207641
9127,008	159,2963	-0,601927	0,798551	52,14253906	-119,6054402	-67,46293121
9339,264	163,0009	0,935222	-0,354063	90,27827212	-123,1852515	-32,90705175
9551,52	166,7055	-0,979855	-0,19971	105,8229548	-82,85642535	22,96664916
9763,776	170,41	0,72205	0,691841	87,01456872	-1,454620374	85,55983137
9976,032	174,1146	-0,24138	-0,970431	31,42909587	102,4555686	133,8847462
10188,29	177,8192	-0,313794	0,949491	-50,61390352	197,0982941	146,4843557
10400,54	181,5237	0,772113	-0,635485	-136,3705098	245,4935502	109,1230342
10612,8	185,2283	-0,992115	0,125333	-195,6031135	217,5245109	21,92142914
10825,06	188,9329	0,905894	0,423504	-199,5721125	102,7615395	-96,8106126
11037,31	192,6374	-0,540064	-0,841624	-131,9104385	-80,42294518	-212,3333501
11249,57	196,342	0,00754	0,999972	2,073914644	-283,7702947	-281,6964
11461,82	200,0466	0,527312	-0,849672	171,4788914	-438,6469925	-267,1680959
11674,08	203,7511	-0,899405	0,437116	324,1553998	-475,5455526	-151,3901467
11886,34	207,4557	0,993892	0,110359	399,9680325	-349,1697445	50,7982762

 $n = 360^\circ$
 $\frac{n}{180} \pi$
 $\cos n$
 $\sin n$
 A_n
 L_n
 C_n
 $\frac{R_1^n \cos n + R_2^n \sin n}{2}$
 $\frac{R_1^n \sin n - R_2^n \cos n}{2}$

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0,911271938	0,144567316	-0,809623451	0,568867435	1,204494339	0,695435531	4
0,894580947	0,464923191	0,830916941	0,305652522	1,241281385	0,716675165	1
1,128769964	-0,046966143	0,494734856	0,867773936	1,325245665	0,765153386	2
1,409790999	-0,459292103	0,82774047	0,322329767	1,448180649	0,836132015	2
1,482179933	-0,465998585	0,853020519	0,234949597	1,604661391	0,926478863	2
1,292583136	-0,880399087	0,446359419	-0,160189628	1,792020611	1,034653932	6
1,172706526	-0,613765785	0,122242954	-0,779966808	2,009802738	1,160394191	6
1,651862089	-0,173561795	-0,67935877	-0,712985249	2,259191815	1,304383265	7
2,390020071	0,202739294	-0,769303447	-0,605862184	2,542589419	1,468007748	8
2,844838928	0,480126505	-0,809520373	-0,337868768	2,863352935	1,653206082	8
2,74563154	0,65629211	-0,752044066	-0,060912964	3,225656657	1,86238837	8
2,285621122	0,83268633	-0,370068172	0,411925993	3,634437327	2,098404923	4
2,509420801	0,470519557	0,315290197	0,824137997	4,095396168	2,364547441	1
3,827344349	-0,022189157	0,725054579	0,688333858	4,615039595	2,664572515	2
5,138172567	-0,324944078	0,810237061	0,487777871	5,200748077	3,002741384	2
5,596018536	-0,557019749	0,794715878	0,241154873	5,860867365	3,383872612	2
4,977043372	-0,754445237	0,646144559	-0,115367209	6,604819396	3,813406118	5
4,319512146	-0,754238084	0,096521789	-0,649467826	7,443232042	4,297478084	6
5,823142161	-0,240276773	-0,553049609	-0,797748834	8,388088138	4,843007008	4
8,652488847	0,168207417	-0,776642976	-0,607068326	9,452895103	5,45779163	8
10,64519533	0,426970644	-0,816230205	-0,389184175	10,65287707	6,150621863	8
10,60861588	0,643938919	-0,756608852	-0,113515256	12,00519196	6,931404135	8
8,902388952	0,811581678	-0,480358383	0,332552257	13,52917652	7,811302843	4
9,041037278	0,56522371	0,228563176	0,792641806	15,24662258	8,802899876	1
13,6332873	0,040570265	0,685706264	0,726746843	17,18208856	9,920374458	1
18,87163809	-0,287944268	0,805689494	0,517641321	19,36325056	11,17970586	2
21,23789824	-0,520497778	0,805072174	0,284501068	21,82129808	12,59890189	2
19,43661994	-0,729117323	0,682833931	-0,046105883	24,59138	14,19825635	6
16,39673478	-0,790495201	0,218589303	-0,572132899	27,71310716	16,00063924	6
20,63406537	-0,325072988	-0,486198645	-0,81113404	31,23111878	18,03182377	7
31,19275174	0,117992137	-0,758659412	-0,640713472	35,19572075	20,32085494	8
39,64361127	0,391812531	-0,816279764	-0,424464706	39,66360503	22,9004648	8
40,8103271	0,610757785	-0,774670366	-0,163892501	44,69866025	25,80754056	8
34,8220627	0,79764566	-0,549917375	0,247693927	50,37288535	29,08365205	4
32,97891238	0,645122842	0,110840308	0,755996656	56,76741907	32,77564611	1
48,40663379	0,108886305	0,646355817	0,755227072	63,97370024	36,93631654	1
68,96137338	-0,246160021	0,79728456	0,551128456	72,09477532	41,62515896	2
80,19515985	-0,486871455	0,811077065	0,324207003	81,24677185	46,90922162	2
75,66067548	-0,698492131	0,715417653	0,016921114	91,5605591	52,86406415	2
63,01864024	-0,81130809	0,326046533	-0,485255439	103,1836194	59,57483798	6
73,36768583	-0,413209539	-0,403264034	-0,816477799	116,282157	67,13750405	7
111,9250041	0,063952407	-0,736911375	-0,672957439	131,0434749	75,66020492	8
146,88619	0,354985987	-0,814272875	-0,459287093	147,678653	85,26481122	8
156,229468	0,577856875	-0,788489221	-0,210632809	166,4255666	96,08866432	8
136,3493746	0,776116173	-0,607677341	0,16843971	187,5522877	108,2865402	4
122,0415332	0,712991442	-0,01191906	0,701071423	211,3609184	122,0328628	4
171,4936059	0,183266867	0,597430837	0,780698181	238,1919112	137,5241981	1
250,7332671	-0,201863535	0,786087528	0,584223854	268,4289365	154,982065	2
301,2836467	-0,452631636	0,814825341	0,362193685	302,5043696	174,6561026	2
293,3565065	-0,666776121	0,741502254	0,074726241	340,9054733	196,8276405	2
244,461156	-0,816375557	0,420359378	-0,396016341	384,1813654	221,8137213	6
262,5902996	-0,502343151	-0,306267769	-0,808610792	432,9508706	249,9716343	7
399,853402	0,005186688	-0,709685833	-0,704499196	487,9113702	281,7040244	8
541,4748246	0,316688576	-0,810096744	-0,493408158	549,8487734	317,4646498	8
595,0960195	0,544711087	-0,799107265	-0,254396168	619,6487561	357,7648707	8
533,3614181	0,749900572	-0,654658797	0,095241753	698,3094253	403,1809615	4

$$Z_0 = \sqrt{\frac{A_n^2 + L_n^2 + C_n^2}{\rho_s}}$$

$$\frac{A_n}{Z_0}$$

$$a_n$$

$$\frac{L_n}{Z_0}$$

$$e_n$$

$$\frac{C_n}{Z_0}$$

$$c_n$$

$$Z_{max} = \frac{\sqrt{2}}{2} (R_1^{2n} + R_2^{2n})^{0.5}$$

$$Z_{min} = \frac{(R_1^{2n} + R_2^{2n})^{0.5}}{2}$$

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1,310361489	0,756559751 (command "_line" "	0,845521843	-0,809623451
1,248237683	0,720691503 (command "_line" "	0,429814375	0,830916941
1,475220503	0,85174394 (command "_line" "	-0,118686958	0,494734856
1,686086616	0,973491118 (command "_line" "	-0,630519206	0,82774047
1,599798972	0,923671462 (command "_line" "	-0,947548565	0,853020519
1,249290314	0,721299258 (command "_line" "	-0,971826812	0,446359419
1,010610476	0,583493347 (command "_line" "	-0,69585303	0,122242954
1,266393194	0,7311739 (command "_line" "	-0,204891061	-0,67935877
1,628070475	0,939994501 (command "_line" "	0,349373295	-0,769303447
1,72080115	0,993534151 (command "_line" "	0,795696566	-0,809520373
1,474252945	0,851185303 (command "_line" "	0,996184358	-0,752044066
1,089218337	0,628873948 (command "_line" "	0,888894704	-0,370068172
1,061268959	0,612741893 (command "_line" "	0,506975419	0,315290197
1,436382132	0,829319938 (command "_line" "	-0,031577122	0,725054579
1,71116054	0,987967979 (command "_line" "	-0,560373713	0,810237061
1,653732033	0,954810643 (command "_line" "	-0,916039307	0,794715878
1,305143805	0,753547232 (command "_line" "	-0,988688773	0,646144559
1,005127207	0,580327487 (command "_line" "	-0,755876601	0,096521789
1,202381527	0,694215662 (command "_line" "	-0,289531581	-0,553049609
1,585346132	0,915326866 (command "_line" "	0,266266049	-0,776642976
1,730751063	0,999278905 (command "_line" "	0,739799102	-0,816230205
1,530514694	0,883668992 (command "_line" "	0,984766552	-0,756608852
1,139680426	0,658014103 (command "_line" "	0,925484158	-0,480358383
1,027052154	0,592986232 (command "_line" "	0,580267591	0,228563176
1,374271441	0,793459262 (command "_line" "	0,055773688	0,685706264
1,68802635	0,974611057 (command "_line" "	-0,485951848	0,805689494
1,68569439	0,973264659 (command "_line" "	-0,877539493	0,805072174
1,368944148	0,790383457 (command "_line" "	-0,998005771	0,682833931
1,024754982	0,591659921 (command "_line" "	-0,810131865	0,218589303
1,144313833	0,66068928 (command "_line" "	-0,371962604	-0,486198645
1,535011782	0,886265463 (command "_line" "	0,181126851	-0,758659412
1,731126928	0,999495917 (command "_line" "	0,678256022	-0,816279764
1,581333448	0,913010074 (command "_line" "	0,965833713	-0,774670366
1,197307087	0,691285847 (command "_line" "	0,955010981	-0,549917375
1,006201747	0,580947891 (command "_line" "	0,649131576	0,110840308
1,310543073	0,756664592 (command "_line" "	0,142698873	0,646355817
1,656723364	0,956537739 (command "_line" "	-0,407821548	0,79728456
1,709581977	0,987056569 (command "_line" "	-0,832342927	0,811077065
1,431230775	0,826345713 (command "_line" "	-0,999706704	0,715417653
1,057806322	0,61074268 (command "_line" "	-0,858204782	0,326046533
1,09279734	0,630945346 (command "_line" "	-0,451555076	-0,403264034
1,479311406	0,854105893 (command "_line" "	0,094605423	-0,736911375
1,72270586	0,994633868 (command "_line" "	0,611536979	-0,814272875
1,625888642	0,938734782 (command "_line" "	0,939530324	-0,788489221
1,259153486	0,72699393 (command "_line" "	0,977249844	-0,607677341
1,00007105	0,577408227 (command "_line" "	0,713041855	-0,01191906
1,247006768	0,719980813 (command "_line" "	0,228535083	0,597430837
1,617821179	0,934076893 (command "_line" "	-0,326579046	0,786087528
1,725010705	0,99596461 (command "_line" "	-0,780794516	0,814825341
1,490423326	0,860521551 (command "_line" "	-0,993778592	0,741502254
1,102101144	0,636317058 (command "_line" "	-0,899728497	0,420359378
1,050480389	0,606512927 (command "_line" "	-0,527701602	-0,306267769
1,419409619	0,819520565 (command "_line" "	0,007362034	-0,709685833
1,705622421	0,984770451 (command "_line" "	0,540151123	-0,810096744
1,663371863	0,960376364 (command "_line" "	0,906057113	-0,799107265
1,322883442	0,763789516 (command "_line" "	0,992031037	-0,654658797

$$\frac{1}{2} \cdot \frac{V_0}{2}$$

$$\frac{v_n}{v_{min}}$$

$$\frac{v_n}{v_{max}} \cdot 3$$