

HAVERSINE TABLE

LOG					LOG					LOG					LOG									
O	'	"	COSINE	HAVERSINE	O	'	"	COSINE	HAVERSINE	O	'	"	COSINE	HAVERSINE	O	'	"	COSINE	HAVERSINE	O	'	"	COSINE	HAVERSINE
1	0	0	0.99984770	-0.00006615	0.00007165	-4.11831628	1	11	0	0.99978673	-0.00009263	0.00010663	-3.97210650	1	21	0	0.99972243	-0.00012056	0.00013878	-3.85765781				
1	1	6	0.99984206	-0.00006860	0.00007897	-4.10253677	1	11	6	0.99978613	-0.00009289	0.00010693	-3.97088404	1	21	6	0.99972174	-0.00012086	0.00013913	-3.85658619				
1	1	12	0.99984154	-0.00006892	0.00007923	-4.10111638	1	11	12	0.99978553	-0.00009315	0.00010724	-3.96966329	1	21	12	0.99972106	-0.00012116	0.00013947	-3.85551589				
1	1	18	0.99983946	-0.00006973	0.00008027	-4.09545795	1	11	18	0.99978311	-0.00009420	0.00010844	-3.96479741	1	21	18	0.99971830	-0.00012236	0.00014085	-3.85127833				
1	1	24	0.99983842	-0.00007018	0.00008079	-4.09264250	1	11	24	0.99978068	-0.00009473	0.00010965	-3.95923466	1	21	24	0.99971692	-0.00012296	0.00014154	-3.84912164				
1	1	30	0.99983737	-0.00007063	0.00008131	-4.08983615	1	11	30	0.99977826	-0.00009526	0.00011086	-3.95377861	1	21	30	0.99971553	-0.00012356	0.00014223	-3.84700604				
1	1	36	0.99983632	-0.00007108	0.00008184	-4.08703884	1	11	36	0.99977584	-0.00009579	0.00011207	-3.94832261	1	21	36	0.99971414	-0.00012416	0.00014293	-3.84488481				
1	1	42	0.99983528	-0.00007153	0.00008237	-4.08424151	1	11	42	0.99977342	-0.00009632	0.00011328	-3.94286656	1	21	42	0.99971276	-0.00012476	0.00014362	-3.84276261				
1	1	48	0.99983424	-0.00007201	0.00008290	-4.08144422	1	11	48	0.99977100	-0.00009685	0.00011449	-3.93741051	1	21	48	0.99971138	-0.00012537	0.00014432	-3.84063856				
1	1	54	0.99983315	-0.00007247	0.00008343	-4.07864300	1	11	54	0.99976858	-0.00009738	0.00011570	-3.93195446	1	21	54	0.99971000	-0.00012597	0.00014502	-3.83851451				
1	1	60	0.99983208	-0.00007294	0.00008396	-4.07584179	1	11	60	0.99976612	-0.00009791	0.00011691	-3.92649841	1	21	60	0.99970862	-0.00012657	0.00014572	-3.83639046				
1	1	66	0.99983102	-0.00007341	0.00008449	-4.07304058	1	11	66	0.99976366	-0.00009844	0.00011812	-3.92104236	1	21	66	0.99970724	-0.00012717	0.00014643	-3.83426641				
1	1	72	0.99983000	-0.00007389	0.00008502	-4.07023937	1	11	72	0.99976120	-0.00009897	0.00011933	-3.91558631	1	21	72	0.99970586	-0.00012777	0.00014714	-3.83214236				
1	1	78	0.99982900	-0.00007437	0.00008555	-4.06743816	1	11	78	0.99975874	-0.00009950	0.00012054	-3.91013026	1	21	78	0.99970448	-0.00012837	0.00014785	-3.83001831				
1	1	84	0.99982800	-0.00007485	0.00008608	-4.06463695	1	11	84	0.99975628	-0.00010003	0.00012175	-3.90467421	1	21	84	0.99970310	-0.00012897	0.00014856	-3.82789426				
1	1	90	0.99982700	-0.00007533	0.00008661	-4.06183574	1	11	90	0.99975382	-0.00010056	0.00012316	-3.89921806	1	21	90	0.99970172	-0.00012957	0.00014927	-3.82577021				
1	1	96	0.99982600	-0.00007581	0.00008714	-4.05903453	1	11	96	0.99975136	-0.00010109	0.00012457	-3.89376191	1	21	96	0.99970034	-0.00013017	0.00014998	-3.82364616				
1	1	102	0.99982500	-0.00007629	0.00008767	-4.05623332	1	11	102	0.99974890	-0.00010162	0.00012598	-3.88830576	1	21	102	0.99969896	-0.00013077	0.00015069	-3.82152211				
1	1	108	0.99982400	-0.00007677	0.00008820	-4.05343211	1	11	108	0.99974644	-0.00010215	0.00012739	-3.88285051	1	21	108	0.99969758	-0.00013137	0.00015140	-3.81939806				
1	1	114	0.99982300	-0.00007725	0.00008873	-4.05063090	1	11	114	0.99974398	-0.00010268	0.00012880	-3.87739476	1	21	114	0.99969620	-0.00013197	0.00015211	-3.81727401				
1	1	120	0.99982200	-0.00007773	0.00008926	-4.04782969	1	11	120	0.99974152	-0.00010321	0.00013021	-3.87193901	1	21	120	0.99969482	-0.00013257	0.00015282	-3.81514996				
1	1	126	0.99982100	-0.00007821	0.00008979	-4.04502848	1	11	126	0.99973906	-0.00010374	0.00013162	-3.86648326	1	21	126	0.99969344	-0.00013317	0.00015353	-3.81302501				
1	1	132	0.99982000	-0.00007869	0.00009032	-4.04222727	1	11	132	0.99973660	-0.00010427	0.00013303	-3.86102751	1	21	132	0.99969206	-0.00013377	0.00015424	-3.81090096				
1	1	138	0.99981900	-0.00007917	0.00009085	-4.03942606	1	11	138	0.99973414	-0.00010480	0.00013444	-3.85557176	1	21	138	0.99969068	-0.00013437	0.00015495	-3.80877691				
1	1	144	0.99981800	-0.00007965	0.00009138	-4.03662485	1	11	144	0.99973168	-0.00010533	0.00013585	-3.85011601	1	21	144	0.99968930	-0.00013497	0.00015566	-3.80665286				
1	1	150	0.99981700	-0.00008013	0.00009191	-4.03382364	1	11	150	0.99972922	-0.00010586	0.00013726	-3.84466026	1	21	150	0.99968792	-0.00013557	0.00015637	-3.80452881				
1	1	156	0.99981600	-0.00008061	0.00009244	-4.03102243	1	11	156	0.99972676	-0.00010639	0.00013867	-3.83915451	1	21	156	0.99968654	-0.00013617	0.00015708	-3.80240476				
1	1	162	0.99981500	-0.00008109	0.00009297	-4.02822122	1	11	162	0.99972430	-0.00010692	0.00014008	-3.83369876	1	21	162	0.99968516	-0.00013677	0.00015779	-3.80028071				
1	1	168	0.99981400	-0.00008157	0.00009350	-4.02542001	1	11	168	0.99972184	-0.00010745	0.00014149	-3.82824301	1	21	168	0.99968378	-0.00013737	0.00015850	-3.79815666				
1	1	174	0.99981300	-0.00008205	0.00009403	-4.02261880	1	11	174	0.99971938	-0.00010798	0.00014290	-3.82278726	1	21	174	0.99968240	-0.00013797	0.00015921	-3.79603261				
1	1	180	0.99981200	-0.00008253	0.00009456	-4.01981705	1	11	180	0.99971692	-0.00010851	0.00014431	-3.81733151	1	21	180	0.99968102	-0.00013857	0.00015992	-3.79390856				
1	1	186	0.99981100	-0.00008301	0.00009509	-4.01701524	1	11	186	0.99971446	-0.00010904	0.00014572	-3.81188076	1	21	186	0.99967964	-0.00013917	0.00016063	-3.79178451				
1	1	192	0.99981000	-0.00008349	0.00009562	-4.01421343	1	11	192	0.99971200	-0.00010957	0.00014713	-3.80642501	1	21	192	0.99967826	-0.00013977	0.00016134	-3.78966046				
1	1	198	0.99980900	-0.00008397	0.00009615	-4.01141162	1	11	198	0.99970954	-0.00011010	0.00014854	-3.80096926	1	21	198	0.99967688	-0.00014037	0.00016205	-3.78753641				
1	1	204	0.99980800	-0.00008445	0.00009668	-4.00860981	1	11	204	0.99970708	-0.00011063	0.00014995	-3.79551376	1	21	204	0.99967550	-0.00014097	0.00016276	-3.78541236				
1	1	210	0.99980700	-0.00008493	0.00009721	-4.00580806	1	11	210	0.99970462	-0.00011116	0.00015136	-3.79005801	1	21	210	0.99967412	-0.00014157	0.00016347	-3.78328831				
1	1	216	0.99980600	-0.00008541	0.00009774	-4.00300631	1	11	216	0.99970216	-0.00011169	0.00015277	-3.78460226	1	21	216	0.99967274	-0.00014217	0.00016418	-3.78116426				
1	1	222	0.99980500	-0.00008589	0.00009827	-4.00020456	1	11	222	0.99969970	-0.00011222	0.00015418	-3.77914651	1	21	222	0.99967136	-0.00014277	0.00016489	-3.77902026				
1	1	228	0.99980400	-0.00008637	0.00009880	-3.99734481	1	11	228	0.99969724	-0.00011275	0.00015559	-3.77369076	1	21	228	0.99967000	-0.00014337	0.00016560	-3.77699471				
1	1	234	0.99980300	-0.00008685	0.00009933	-3.99454306	1	11	234	0.99969478	-0.00011328	0.00015700	-3.76823501	1	21	234	0.99966864	-0.00014397	0.00016631	-3.77497876				
1	1	240	0.99980200	-0.00008733	0.00009986	-3.99174131	1	11	240	0.99969232	-0.00011381	0.00015841	-3.76277926	1	21	240	0.99966726	-0.00014457	0.00016702	-3.77296276				
1	1	246	0.99980100	-0.00008781	0.00010039	-3.98893956	1	11	246	0.99968986	-0.00011434	0.00015982	-3.75732351	1	21	246	0.99966590	-0.00014517	0.00016773	-3.77094676				
1	1	252	0.99980000	-0.00008829	0.00010092	-3.98613781	1	11	252	0.99968740	-0.00011487	0.00016123	-3.75186776	1	21	252	0.99966454	-0.00014577	0.00016844	-3.76893076				
1	1	258	0.99979900	-0.00008877	0.00010145	-3.98333606	1	11	258	0.99968494	-0.00011540	0.00016264	-3.74641201	1	21	258	0.99966318	-0.00014637	0.00016915	-3.76691476				
1	1	264	0.99979800	-0.00008925	0.00010198	-3.98053431	1	11	264	0.99968248	-0.00011593	0.00016405	-3.74095626	1	21	264	0.99966182	-0.00014697	0.00016986	-3.76489876				
1	1	270	0.99979700	-0.00008973	0.00010251	-3.97773256	1	11	270	0.99968002	-0.00011646	0.00016546	-3.73549751	1	21	270	0.99966046	-0.00014757	0.00017057	-3.76288276				
1	1	276	0.99979600	-0.00009021	0.00010304	-3.97493081	1	11	276	0.99967756	-0.00011699	0.00016687	-3.73003876	1	21	276	0.99965910	-0.00014817	0.00017128	-3.76086676				
1	1	282	0.99979500	-0.00009069	0.00010357	-3.97212906	1	11	282	0.99967510	-0.00011752	0.00016828	-3.72457901	1	21	282	0.99965774	-0.00014877	0.00017199	-3.75885076				
1	1	288	0.99979400	-0.00009117	0.00010410	-3.96932731	1	11	288	0.99967264	-0.00011805	0.00016969	-3.71911926	1	21	288	0.99965638	-0.00014937	0.00017270	-3.75683476				
1	1	294	0.99979300</																					

HAVERSINE TABLE

O	I	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE	O	I	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE	O	I	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE
2	0	0	0.99939083	-0.00024644	0.00030459	-3.51628936	2	11	0	0.99927404	-0.00031539	0.00036298	-3.44011772	2	21	0	0.99915899	-0.00036540	0.00042050	-3.37623042
2	1	6	0.99937961	-0.00026952	0.00031020	-3.50836438	2	11	6	0.99927293	-0.00031588	0.00036353	-3.43955011	2	21	6	0.99915780	-0.00036592	0.00042110	-3.37561470
2	1	12	0.99937858	-0.00026996	0.00031071	-3.50764750	2	11	12	0.99927182	-0.00031636	0.00036409	-3.43879280	2	21	12	0.99915661	-0.00036644	0.00042170	-3.37499942
2	1	18	0.99937748	-0.00027042	0.00031126	-3.50693062	2	11	18	0.99927071	-0.00031684	0.00036467	-3.43793911	2	21	18	0.99915542	-0.00036696	0.00042230	-3.37428425
2	1	24	0.99937638	-0.00027089	0.00031181	-3.50621374	2	11	24	0.99926960	-0.00031732	0.00036526	-3.43708762	2	21	24	0.99915423	-0.00036748	0.00042290	-3.37356888
2	1	30	0.99937528	-0.00027136	0.00031236	-3.50549686	2	11	30	0.99926849	-0.00031780	0.00036584	-3.43623613	2	21	30	0.99915304	-0.00036800	0.00042350	-3.37285354
2	1	36	0.99937418	-0.00027183	0.00031291	-3.50478002	2	11	36	0.99926738	-0.00031828	0.00036631	-3.43538464	2	21	36	0.99915185	-0.00036852	0.00042410	-3.37213820
2	1	42	0.99937308	-0.00027230	0.00031346	-3.50406318	2	11	42	0.99926627	-0.00031876	0.00036677	-3.43453315	2	21	42	0.99915066	-0.00036904	0.00042470	-3.37142286
2	1	48	0.99937198	-0.00027277	0.00031399	-3.50334634	2	11	48	0.99926516	-0.00031924	0.00036723	-3.43368172	2	21	48	0.99914947	-0.00036956	0.00042530	-3.37070752
2	2	0	0.99937088	-0.00027324	0.00031452	-3.50262950	2	12	0	0.99926405	-0.00031972	0.00036769	-3.43282929	2	22	0	0.99914828	-0.00037008	0.00042590	-3.37000218
2	2	6	0.99936978	-0.00027371	0.00031505	-3.50191266	2	12	6	0.99926294	-0.00032020	0.00036815	-3.43197687	2	22	6	0.99914709	-0.00037060	0.00042650	-3.36929684
2	2	12	0.99936868	-0.00027418	0.00031558	-3.50119582	2	12	12	0.99926183	-0.00032068	0.00036861	-3.43112446	2	22	12	0.99914590	-0.00037112	0.00042710	-3.36859150
2	2	18	0.99936758	-0.00027465	0.00031611	-3.50047900	2	12	18	0.99926072	-0.00032116	0.00036907	-3.43027205	2	22	18	0.99914471	-0.00037164	0.00042770	-3.36788616
2	2	24	0.99936648	-0.00027512	0.00031664	-3.49976216	2	12	24	0.99925961	-0.00032164	0.00036953	-3.42941950	2	22	24	0.99914352	-0.00037216	0.00042830	-3.36718082
2	2	30	0.99936538	-0.00027559	0.00031717	-3.49904532	2	12	30	0.99925850	-0.00032212	0.00037000	-3.42856695	2	22	30	0.99914233	-0.00037268	0.00042890	-3.36647548
2	2	36	0.99936428	-0.00027606	0.00031770	-3.49832850	2	12	36	0.99925739	-0.00032260	0.00037046	-3.42771400	2	22	36	0.99914114	-0.00037320	0.00042950	-3.36577014
2	2	42	0.99936318	-0.00027653	0.00031823	-3.49761166	2	12	42	0.99925628	-0.00032308	0.00037092	-3.42686155	2	22	42	0.99913995	-0.00037372	0.00043010	-3.36506480
2	2	48	0.99936208	-0.00027700	0.00031876	-3.49689482	2	12	48	0.99925517	-0.00032356	0.00037138	-3.42600900	2	22	48	0.99913876	-0.00037424	0.00043070	-3.36435946
2	3	0	0.99936098	-0.00027747	0.00031929	-3.49617800	2	13	0	0.99925406	-0.00032404	0.00037184	-3.42515655	2	23	0	0.99913757	-0.00037476	0.00043130	-3.36365412
2	3	6	0.99935988	-0.00027794	0.00031982	-3.49546116	2	13	6	0.99925295	-0.00032452	0.00037230	-3.42430400	2	23	6	0.99913638	-0.00037528	0.00043190	-3.36294878
2	3	12	0.99935878	-0.00027841	0.00032035	-3.49474432	2	13	12	0.99925184	-0.00032500	0.00037276	-3.42345155	2	23	12	0.99913519	-0.00037580	0.00043250	-3.36224344
2	3	18	0.99935768	-0.00027888	0.00032088	-3.49402750	2	13	18	0.99925073	-0.00032548	0.00037322	-3.42260000	2	23	18	0.99913400	-0.00037632	0.00043310	-3.36153810
2	3	24	0.99935658	-0.00027935	0.00032141	-3.49331066	2	13	24	0.99924962	-0.00032596	0.00037368	-3.42174755	2	23	24	0.99913281	-0.00037684	0.00043370	-3.36083276
2	3	30	0.99935548	-0.00027982	0.00032194	-3.49259382	2	13	30	0.99924851	-0.00032644	0.00037414	-3.42089500	2	23	30	0.99913162	-0.00037736	0.00043430	-3.36012742
2	3	36	0.99935438	-0.00028029	0.00032247	-3.49187700	2	13	36	0.99924740	-0.00032692	0.00037460	-3.42004255	2	23	36	0.99913043	-0.00037788	0.00043490	-3.35942208
2	3	42	0.99935328	-0.00028076	0.00032300	-3.49116016	2	13	42	0.99924629	-0.00032740	0.00037506	-3.41919000	2	23	42	0.99912924	-0.00037840	0.00043550	-3.35871674
2	3	48	0.99935218	-0.00028123	0.00032353	-3.49044332	2	13	48	0.99924518	-0.00032788	0.00037552	-3.41833755	2	23	48	0.99912805	-0.00037892	0.00043610	-3.35801140
2	4	0	0.99935108	-0.00028170	0.00032406	-3.48972648	2	14	0	0.99924407	-0.00032836	0.00037598	-3.41748500	2	24	0	0.99912686	-0.00037944	0.00043670	-3.35730606
2	4	6	0.99934998	-0.00028217	0.00032459	-3.48900964	2	14	6	0.99924296	-0.00032884	0.00037644	-3.41663255	2	24	6	0.99912567	-0.00037996	0.00043730	-3.35660072
2	4	12	0.99934888	-0.00028264	0.00032512	-3.48829280	2	14	12	0.99924185	-0.00032932	0.00037690	-3.41578000	2	24	12	0.99912448	-0.00038048	0.00043790	-3.35589538
2	4	18	0.99934778	-0.00028311	0.00032565	-3.48757600	2	14	18	0.99924074	-0.00032980	0.00037736	-3.41492755	2	24	18	0.99912329	-0.00038100	0.00043850	-3.35519004
2	4	24	0.99934668	-0.00028358	0.00032618	-3.48685916	2	14	24	0.99923963	-0.00033028	0.00037782	-3.41407500	2	24	24	0.99912210	-0.00038152	0.00043910	-3.35448470
2	4	30	0.99934558	-0.00028405	0.00032671	-3.48614232	2	14	30	0.99923852	-0.00033076	0.00037828	-3.41322255	2	24	30	0.99912091	-0.00038204	0.00043970	-3.35377936
2	4	36	0.99934448	-0.00028452	0.00032724	-3.48542548	2	14	36	0.99923741	-0.00033124	0.00037874	-3.41237000	2	24	36	0.99911972	-0.00038256	0.00044030	-3.35307402
2	4	42	0.99934338	-0.00028499	0.00032777	-3.48470864	2	14	42	0.99923630	-0.00033172	0.00037920	-3.41151755	2	24	42	0.99911853	-0.00038308	0.00044090	-3.35236868
2	4	48	0.99934228	-0.00028546	0.00032830	-3.48399180	2	14	48	0.99923519	-0.00033220	0.00037966	-3.41066500	2	24	48	0.99911734	-0.00038360	0.00044150	-3.35166334
2	5	0	0.99934118	-0.00028593	0.00032883	-3.48327500	2	15	0	0.99923408	-0.00033268	0.00038012	-3.40981255	2	25	0	0.99911615	-0.00038412	0.00044210	-3.35095800
2	5	6	0.99934008	-0.00028640	0.00032936	-3.48255816	2	15	6	0.99923297	-0.00033316	0.00038058	-3.40896000	2	25	6	0.99911496	-0.00038464	0.00044270	-3.35025266
2	5	12	0.99933898	-0.00028687	0.00032989	-3.48184132	2	15	12	0.99923186	-0.00033364	0.00038104	-3.40810755	2	25	12	0.99911377	-0.00038516	0.00044330	-3.34954732
2	5	18	0.99933788	-0.00028734	0.00033042	-3.48112448	2	15	18	0.99923075	-0.00033412	0.00038150	-3.40725500	2	25	18	0.99911258	-0.00038568	0.00044390	-3.34884198
2	5	24	0.99933678	-0.00028781	0.00033095	-3.48040764	2	15	24	0.99922964	-0.00033460	0.00038196	-3.40640255	2	25	24	0.99911139	-0.00038620	0.00044450	-3.34813664
2	5	30	0.99933568	-0.00028828	0.00033148	-3.47969080	2	15	30	0.99922853	-0.00033508	0.00038242	-3.40555000	2	25	30	0.99911020	-0.00038672	0.00044510	-3.34743130
2	5	36	0.99933458	-0.00028875	0.00033201	-3.47897396	2	15	36	0.99922742	-0.00033556	0.00038288	-3.40469755	2	25	36	0.99910901	-0.00038724	0.00044570	-3.34672596
2	5	42	0.99933348	-0.00028922	0.00033254	-3.47825712	2	15	42	0.99922631	-0.00033604	0.00038334	-3.40384500	2	25	42	0.99910782	-0.00038776	0.00044630	-3.34602062
2	5	48	0.99933238	-0.00028969	0.00033307	-3.47754028	2	15	48	0.99922520	-0.00033652	0.00038380	-3.40303255	2	25	48	0.99910663	-0.00038828	0.00044690	-3.34531528
2	6	0	0.99933128	-0.00029016	0.00033360	-3.47682344	2	16	0	0.99922409	-0.00033700	0.00038426	-3.40218000	2	26	0	0.99910544	-0.00038880	0.00044750	-3.34460994
2	6	6	0.99933018	-0.00029063	0.00033413	-3.47610660	2	16	6	0.99922298	-0.00033748	0.00038472	-3.40132755	2	26	6	0.99910425	-0.00038932	0.00044810	-3.34390460
2	6	12	0.99932908	-0.00029110	0.00033466	-3.47538976	2	16	12	0.99922187	-0.00033796	0.00038518	-3.40047500	2	26	12	0.99910306	-0.00038984	0.00044870	-3.34320326
2	6	18	0.99932798	-0.00029157	0.00033519	-3.47467292	2	16	18	0.99922076	-0.00033844	0.00038564	-3.40000255	2	26	18	0.99910187	-0.00039036	0.00044930	-3.34250182
2	6	24	0.99932688	-0.00029204	0.00033572	-3.47395608	2	16	24	0.99921965	-0.00033892	0.00038610	-3.39915000	2	26	24	0.99910068	-0.00039088	0.00044990	

HAVERSINE TABLE

LOG COSINE				LOG HAVERSINE				LOG COSINE				LOG HAVERSINE								
O	'	"	LOG COSINE	LOG HAVERSINE	O	'	"	LOG COSINE	LOG HAVERSINE	O	'	"	LOG COSINE	LOG HAVERSINE						
3	0	0	0.99862953	-0.00059559	0.00068523	-3.16461697	3	11	0	0.99845696	-0.00067065	0.00077152	-3.11265274	3	21	0	0.99829120	-0.00074276	0.00085440	-3.06833937
3	1	6	0.99861274	-0.00060290	0.00069363	-3.15887130	3	11	6	0.99845534	-0.00067135	0.00077233	-3.11219822	3	21	6	0.99828950	-0.00074350	0.00085525	-3.06790746
3	1	12	0.99861121	-0.00060357	0.00069440	-3.15839192	3	11	12	0.99845373	-0.00067206	0.00077314	-3.11174394	3	21	12	0.99828780	-0.00074424	0.00085610	-3.06747578
3	1	18	0.99860957	-0.00060423	0.00069517	-3.15792254	3	11	18	0.99845212	-0.00067277	0.00077395	-3.11128946	3	21	18	0.99828610	-0.00074498	0.00085695	-3.06704410
3	1	24	0.99860793	-0.00060490	0.00069594	-3.15747312	3	11	24	0.99845051	-0.00067348	0.00077476	-3.11083498	3	21	24	0.99828440	-0.00074572	0.00085780	-3.06661242
3	2	0	0.99859892	-0.00060557	0.00070054	-3.15456642	3	12	0	0.99844890	-0.00067419	0.00077557	-3.11038546	3	22	0	0.99828270	-0.00074646	0.00085865	-3.06618074
3	2	6	0.99859738	-0.00060624	0.00070131	-3.15408942	3	12	6	0.99844729	-0.00067490	0.00077638	-3.11003594	3	22	6	0.99828100	-0.00074720	0.00085950	-3.06574906
3	2	12	0.99859584	-0.00060691	0.00070208	-3.15361262	3	12	12	0.99844568	-0.00067561	0.00077719	-3.10968642	3	22	12	0.99827930	-0.00074794	0.00086035	-3.06531738
3	2	18	0.99859430	-0.00060758	0.00070285	-3.15313582	3	12	18	0.99844407	-0.00067632	0.00077800	-3.10933690	3	22	18	0.99827760	-0.00074868	0.00086120	-3.06488570
3	2	24	0.99859276	-0.00060825	0.00070362	-3.15265902	3	12	24	0.99844246	-0.00067703	0.00077881	-3.10898738	3	22	24	0.99827590	-0.00074942	0.00086205	-3.06445402
3	3	0	0.99858438	-0.00061428	0.00070826	-3.14980814	3	13	0	0.99844085	-0.00067774	0.00077962	-3.10863786	3	23	0	0.99827420	-0.00075016	0.00086290	-3.06402234
3	3	6	0.99858284	-0.00061495	0.00070903	-3.14933134	3	13	6	0.99843924	-0.00067845	0.00078043	-3.10828834	3	23	6	0.99827250	-0.00075090	0.00086375	-3.06359066
3	3	12	0.99858130	-0.00061562	0.00070981	-3.14885454	3	13	12	0.99843763	-0.00067916	0.00078124	-3.10793882	3	23	12	0.99827080	-0.00075164	0.00086460	-3.06315798
3	3	18	0.99857976	-0.00061629	0.00071059	-3.14837774	3	13	18	0.99843602	-0.00067987	0.00078205	-3.10758930	3	23	18	0.99826910	-0.00075238	0.00086545	-3.06272530
3	3	24	0.99857822	-0.00061696	0.00071137	-3.14790094	3	13	24	0.99843441	-0.00068058	0.00078286	-3.10723978	3	23	24	0.99826740	-0.00075312	0.00086630	-3.06229262
3	4	0	0.99856641	-0.00062305	0.00071680	-3.14460397	3	14	0	0.99843280	-0.00068129	0.00078367	-3.10689026	3	24	0	0.99826570	-0.00075386	0.00086715	-3.06186004
3	4	6	0.99856487	-0.00062372	0.00071758	-3.14412717	3	14	6	0.99843119	-0.00068200	0.00078448	-3.10654074	3	24	6	0.99826400	-0.00075460	0.00086800	-3.06142736
3	4	12	0.99856333	-0.00062439	0.00071836	-3.14365037	3	14	12	0.99842958	-0.00068271	0.00078529	-3.10619122	3	24	12	0.99826230	-0.00075534	0.00086885	-3.06099468
3	4	18	0.99856179	-0.00062506	0.00071914	-3.14317357	3	14	18	0.99842797	-0.00068342	0.00078610	-3.10584170	3	24	18	0.99826060	-0.00075608	0.00086970	-3.06056200
3	4	24	0.99856025	-0.00062573	0.00071992	-3.14269677	3	14	24	0.99842636	-0.00068413	0.00078691	-3.10549218	3	24	24	0.99825890	-0.00075682	0.00087055	-3.06012932
3	5	0	0.99854843	-0.00063174	0.00072539	-3.13943083	3	15	0	0.99842475	-0.00068484	0.00078772	-3.10514266	3	25	0	0.99825720	-0.00075756	0.00087140	-3.05969664
3	5	6	0.99854689	-0.00063241	0.00072617	-3.13895403	3	15	6	0.99842314	-0.00068555	0.00078853	-3.10479314	3	25	6	0.99825550	-0.00075830	0.00087225	-3.05926416
3	5	12	0.99854535	-0.00063308	0.00072695	-3.13847723	3	15	12	0.99842153	-0.00068626	0.00078934	-3.10444362	3	25	12	0.99825380	-0.00075904	0.00087310	-3.05883168
3	5	18	0.99854381	-0.00063375	0.00072773	-3.13800043	3	15	18	0.99841992	-0.00068697	0.00079015	-3.10409410	3	25	18	0.99825210	-0.00075978	0.00087395	-3.05840920
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3	6	0	0.99853067	-0.00064047	0.00073396	-3.13475458	3	16	0	0.99841670	-0.00068839	0.00079177	-3.10339506	3	26	0	0.99824870	-0.00076126	0.00087565	-3.05756424
3	6	6	0.99852913	-0.00064114	0.00073474	-3.13427778	3	16	6	0.99841509	-0.00068910	0.00079258	-3.10304554	3	26	6	0.99824700	-0.00076200	0.00087650	-3.05714176
3	6	12	0.99852759	-0.00064181	0.00073552	-3.13380098	3	16	12	0.99841348	-0.00068981	0.00079339	-3.10269602	3	26	12	0.99824530	-0.00076274	0.00087735	-3.05671928
3	6	18	0.99852605	-0.00064248	0.00073630	-3.13332418	3	16	18	0.99841187	-0.00069052	0.00079420	-3.10234650	3	26	18	0.99824360	-0.00076348	0.00087820	-3.05629680
3	6	24	0.99852451	-0.00064315	0.00073708	-3.13284738	3	16	24	0.99841026	-0.00069123	0.00079501	-3.10200698	3	26	24	0.99824190	-0.00076422	0.00087905	-3.05587432
3	7	0	0.99851295	-0.00064917	0.00074351	-3.13010339	3	17	0	0.99840865	-0.00069194	0.00079582	-3.10165746	3	27	0	0.99824020	-0.00076496	0.00087990	-3.05545184
3	7	6	0.99851141	-0.00064984	0.00074429	-3.12962659	3	17	6	0.99840704	-0.00069265	0.00079663	-3.10130794	3	27	6	0.99823850	-0.00076570	0.00088075	-3.05502936
3	7	12	0.99850987	-0.00065051	0.00074507	-3.12914979	3	17	12	0.99840543	-0.00069336	0.00079744	-3.10095842	3	27	12	0.99823680	-0.00076644	0.00088160	-3.05460688
3	7	18	0.99850833	-0.00065118	0.00074585	-3.12867300	3	17	18	0.99840382	-0.00069407	0.00079825	-3.10060890	3	27	18	0.99823510	-0.00076718	0.00088245	-3.05418440
3	7	24	0.99850679	-0.00065185	0.00074663	-3.12819621	3	17	24	0.99840221	-0.00069478	0.00079906	-3.10025938	3	27	24	0.99823340	-0.00076792	0.00088330	-3.05376192
3	8	0	0.99850525	-0.00065252	0.00074741	-3.12771942	3	18	0	0.99840060	-0.00069549	0.00079987	-3.10000986	3	28	0	0.99823170	-0.00076866	0.00088415	-3.05333944
3	8	6	0.99850371	-0.00065319	0.00074819	-3.12724263	3	18	6	0.99839899	-0.00069620	0.00080068	-3.09966034	3	28	6	0.99823000	-0.00076940	0.00088500	-3.05291696
3	8	12	0.99850217	-0.00065386	0.00074897	-3.12676584	3	18	12	0.99839738	-0.00069691	0.00080149	-3.09931082	3	28	12	0.99822830	-0.00077014	0.00088585	-3.05249448
3	8	18	0.99850063	-0.00065453	0.00074975	-3.12628905	3	18	18	0.99839577	-0.00069762	0.00080230	-3.09896130	3	28	18	0.99822660	-0.00077088	0.00088670	-3.05207200
3	8	24	0.99849909	-0.00065520	0.00075053	-3.12581226	3	18	24	0.99839416	-0.00069833	0.00080311	-3.09861178	3	28	24	0.99822490	-0.00077162	0.00088755	-3.05164952
3	9	0	0.99848755	-0.00066121	0.00075598	-3.12179354	3	19	0	0.99839255	-0.00069904	0.00080392	-3.09826226	3	29	0	0.99822320	-0.00077236	0.00088840	-3.05122704
3	9	6	0.99848601	-0.00066188	0.00075676	-3.12131675	3	19	6	0.99839094	-0.00069975	0.00080473	-3.09791274	3	29	6	0.99822150	-0.00077310	0.00088925	-3.05080456
3	9	12	0.99848447	-0.00066255	0.00075754	-3.12084000	3	19	12	0.99838933	-0.00070046	0.00080554	-3.09756322	3	29	12	0.99821980	-0.00077384	0.00089010	-3.05038208
3	9	18	0.99848293	-0.00066322	0.00075832	-3.12036321	3	19	18	0.99838772	-0.00070117	0.00080635	-3.09721370	3	29	18	0.99821810	-0.00077458	0.00089095	-3.05005960
3	9	24	0.99848139	-0.00066389	0.00075910	-3.11988642	3	19	24	0.99838611	-0.00070188	0.00080716	-3.09686418	3	29	24	0.99821640	-0.00077532	0.00089180	-3.04973712
3	10	0	0.99847985	-0.00066456	0.00075988	-3.11940963	3	20	0	0.99838450	-0.00070259	0.0008079								

HAVERSINE TABLE

LOG				LOG				LOG				LOG								
O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE	O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE	O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE
4	0	0	0.99756405	-0.00105921	0.00121797	-2.91436167	4	11	0	0.99733574	-0.00115862	0.00133213	-2.87545325	4	21	0	0.99711932	-0.00125287	0.00144034	-2.84153536
4	1	6	0.99754168	-0.00106895	0.00122916	-2.91039136	4	11	6	0.99733362	-0.00115954	0.00133319	-2.87510743	4	21	6	0.99711712	-0.00125383	0.00144144	-2.84120279
4	1	12	0.99753964	-0.00106984	0.00123018	-2.91003132	4	11	12	0.99733149	-0.00116047	0.00133425	-2.87476173	4	21	12	0.99711491	-0.00125479	0.00144255	-2.84087035
4	1	18	0.99753739	-0.00107039	0.00123126	-2.90985926	4	11	18	0.99732937	-0.00116141	0.00133530	-2.87438035	4	21	18	0.99711267	-0.00125584	0.00144367	-2.83954186
4	1	24	0.99753523	-0.00107157	0.00123231	-2.90978422	4	11	24	0.99732724	-0.00116235	0.00133635	-2.87399848	4	21	24	0.99711044	-0.00125690	0.00144481	-2.83887837
4	2	0	0.99753308	-0.00107275	0.00123335	-2.90971563	4	12	0	0.99732511	-0.00116329	0.00133740	-2.87361664	4	22	0	0.99710827	-0.00125796	0.00144595	-2.83821540
4	2	6	0.99753125	-0.00107393	0.00123437	-2.90965167	4	12	6	0.99732298	-0.00116423	0.00133845	-2.87323490	4	22	6	0.99710610	-0.00125902	0.00144709	-2.83788410
4	2	12	0.99752912	-0.00107511	0.00123539	-2.90959064	4	12	12	0.99732085	-0.00116517	0.00133950	-2.87285316	4	22	12	0.99710393	-0.00126008	0.00144823	-2.83755293
4	2	18	0.99752739	-0.00107629	0.00123640	-2.90953261	4	12	18	0.99731872	-0.00116611	0.00134055	-2.87247142	4	22	18	0.99710176	-0.00126114	0.00144937	-2.83722170
4	2	24	0.99752566	-0.00107747	0.00123741	-2.90947768	4	12	24	0.99731659	-0.00116705	0.00134160	-2.87208968	4	22	24	0.99709959	-0.00126220	0.00145051	-2.83689146
4	3	0	0.99752383	-0.00107865	0.00123842	-2.90942585	4	13	0	0.99731446	-0.00116799	0.00134265	-2.87170794	4	23	0	0.99709742	-0.00126326	0.00145165	-2.83656224
4	3	6	0.99752200	-0.00107983	0.00123943	-2.90937692	4	13	6	0.99731233	-0.00116893	0.00134370	-2.87132620	4	23	6	0.99709525	-0.00126432	0.00145279	-2.83623302
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HAVERSINE TABLE

LOG				LOG				LOG				LOG								
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5	1	24	0.99608633	-0.00167573	0.00192554	-2.71544823	5	11	24	0.99588967	-0.00178777	0.00205517	-2.68715328	5	21	24	0.99563279	-0.00190552	0.00218491	-2.66059282
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5	9	6	0.99597605	-0.00175789	0.00201975	-2.69470235	5	19	6	0.99569509	-0.00187633	0.00215245	-2.66706599	5	29	6	0.99542126	-0.00199309	0.00228937	-2.64028369
5	9	12	0.99597349	-0.00175902	0.00202106	-2.69442158	5	19	12	0.99569239	-0.00187841	0.00215380	-2.66679403	5	29	12	0.99541848	-0.00199430	0.00229076	-2.64002000
5	9	18	0.99597083	-0.00176358	0.00202629	-2.69322994	5	19	18	0.99568616	-0.00187952	0.00215920	-2.66570704	5	29	18	0.99541077	-0.00199916	0.00229633	-2.63966606
5	9	24	0.99596820	-0.00176587	0.00202890	-2.69273886	5	19	24	0.99567620	-0.00188188	0.00216190	-2.66516405	5	29	24	0.99540134	-0.00200159	0.00229911	-2.63843957
5	10	0	0.99596396	-0.00176815	0.00203152	-2.69217868	5	20	0	0.99567079	-0.00188423	0.00216460	-2.66462121	5	30	0	0.99539620	-0.00200402	0.00230190	-2.63791530
5	10	6	0.99596134	-0.00176929	0.00203283	-2.69189873	5	20	6	0.99566809	-0.00188541	0.00216596	-2.66435051	5	30	6	0.99539341	-0.00200524	0.00230330	-2.63765043
5	10	12	0.99595917	-0.00177044	0.00203414	-2.69161886	5	20	12	0.99566538	-0.00188653	0.00216731	-2.66407910	5	30	12	0.99539062	-0.00200646	0.00230469	-2.63738754
5	10	18	0.99595703	-0.00177150	0.00203539	-2.69135003	5	20	18	0.99566265	-0.00188932	0.00217272	-2.66379951	5	30	18	0.99538795	-0.00200781	0.00230607	-2.63712027
5	10	24	0.99595497	-0.00177265	0.00203664	-2.69108126	5	20	24	0.99566013	-0.00189368	0.00217543	-2.66245422	5	30	24</				

HAVERSINE TABLE

O	"	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE	O	"	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE	O	"	"	COSINE	LOG COSINE	HAVERSINE	LOG HAVERSINE
6	0	0	0.99452190	-0.00238655	0.00273905	-2.56239967	6	11	0	0.99418234	-0.00253396	0.00290883	-2.53628148	6	21	0	0.99386482	-0.00267268	0.00306759	-2.51320239
6	1	6	0.99448840	-0.00240028	0.00275580	-2.55975213	6	11	6	0.99417920	-0.00253533	0.00291040	-2.53604762	6	21	6	0.99386160	-0.00267400	0.00306920	-2.51297467
6	1	12	0.99448535	-0.00240161	0.00275733	-2.55951184	6	11	12	0.99417607	-0.00253669	0.00291197	-2.53581382	6	21	12	0.99385838	-0.00267550	0.00307081	-2.51274702
6	1	36	0.99447314	-0.00240694	0.00276343	-2.55855137	6	11	36	0.99416325	-0.00254218	0.00291824	-2.53487926	6	21	36	0.99384550	-0.00268113	0.00307725	-2.51183701
6	1	48	0.99446703	-0.00240961	0.00276649	-2.55807153	6	11	48	0.99415752	-0.00254492	0.00292138	-2.53441235	6	21	48	0.99383905	-0.00268394	0.00308047	-2.51138236
6	2	0	0.99446091	-0.00241228	0.00276954	-2.55759196	6	12	0	0.99415096	-0.00254766	0.00292452	-2.53394570	6	22	0	0.99383260	-0.00268676	0.00308370	-2.51092795
6	2	6	0.99445786	-0.00241362	0.00277107	-2.55735227	6	12	6	0.99414782	-0.00254903	0.00292609	-2.53371247	6	22	6	0.99382937	-0.00268817	0.00308531	-2.51070083
6	2	12	0.99445480	-0.00241495	0.00277260	-2.55711265	6	12	12	0.99414468	-0.00255041	0.00292766	-2.53347930	6	22	12	0.99382615	-0.00268958	0.00308693	-2.51047378
6	2	36	0.99444256	-0.00242030	0.00277872	-2.556515483	6	12	36	0.99413210	-0.00255590	0.00293395	-2.53254725	6	22	36	0.99381323	-0.00269523	0.00309338	-2.50956615
6	2	48	0.99443643	-0.00242297	0.00278179	-2.55627632	6	12	48	0.99412580	-0.00255865	0.00293710	-2.53208160	6	22	48	0.99380677	-0.00269805	0.00309662	-2.50911269
6	3	0	0.99443030	-0.00242565	0.00278485	-2.55519807	6	13	0	0.99411951	-0.00256140	0.00294025	-2.53161620	6	23	0	0.99380030	-0.00270088	0.00309985	-2.50865947
6	3	6	0.99442723	-0.00242699	0.00278638	-2.55495904	6	13	6	0.99411636	-0.00256278	0.00294182	-2.53138359	6	23	6	0.99379707	-0.00270229	0.00310147	-2.50843295
6	3	12	0.99442417	-0.00242833	0.00278792	-2.55472008	6	13	12	0.99411320	-0.00256416	0.00294340	-2.53115105	6	23	12	0.99379383	-0.00270370	0.00310308	-2.50820649
6	3	36	0.99441189	-0.00243369	0.00279406	-2.55376490	6	13	36	0.99410059	-0.00256967	0.00294970	-2.53022150	6	23	36	0.99378088	-0.00270936	0.00310956	-2.50730123
6	3	48	0.99440574	-0.00243638	0.00279713	-2.55328771	6	13	48	0.99409428	-0.00257243	0.00295286	-2.52975710	6	23	48	0.99377440	-0.00271219	0.00311280	-2.50684896
6	4	0	0.99439960	-0.00243906	0.00280020	-2.55281078	6	14	0	0.99408796	-0.00257518	0.00295602	-2.52929294	6	24	0	0.99376792	-0.00271503	0.00311604	-2.50639692
6	4	6	0.99439652	-0.00244040	0.00280174	-2.55257241	6	14	6	0.99408481	-0.00257656	0.00295760	-2.52906096	6	24	6	0.99376468	-0.00271644	0.00311766	-2.50617099
6	4	12	0.99439345	-0.00244175	0.00280328	-2.55233411	6	14	12	0.99408165	-0.00257794	0.00295918	-2.52882904	6	24	12	0.99376143	-0.00271786	0.00311928	-2.50594512
6	4	36	0.99438114	-0.00244712	0.00280943	-2.55138155	6	14	36	0.99406900	-0.00258347	0.00296550	-2.52790198	6	24	36	0.99374845	-0.00272354	0.00312578	-2.50504222
6	4	48	0.99437498	-0.00244981	0.00281251	-2.55090317	6	14	48	0.99406267	-0.00258623	0.00296886	-2.52743882	6	24	48	0.99374495	-0.00272638	0.00312902	-2.50459112
6	5	0	0.99436881	-0.00245251	0.00281559	-2.55043005	6	15	0	0.99405634	-0.00258900	0.00297183	-2.52697951	6	25	0	0.99373845	-0.00272922	0.00313227	-2.50414026
6	5	6	0.99436573	-0.00245385	0.00281714	-2.55019233	6	15	6	0.99405317	-0.00259038	0.00297341	-2.52674454	6	25	6	0.99373520	-0.00273064	0.00313399	-2.50391492
6	5	12	0.99436265	-0.00245520	0.00281868	-2.54995469	6	15	12	0.99405000	-0.00259177	0.00297500	-2.52651324	6	25	12	0.99373200	-0.00273206	0.00313533	-2.50368964
6	5	36	0.99435030	-0.00246059	0.00282485	-2.54900775	6	15	36	0.99403732	-0.00259731	0.00298134	-2.52558866	6	25	36	0.99371933	-0.00273775	0.00314203	-2.50279809
6	5	48	0.99434412	-0.00246329	0.00282794	-2.54853017	6	15	48	0.99403098	-0.00260008	0.00298451	-2.52512673	6	25	48	0.99370942	-0.00274059	0.00314529	-2.50233916
6	6	0	0.99433794	-0.00246599	0.00283103	-2.54805585	6	16	0	0.99402463	-0.00260286	0.00298769	-2.52465605	6	26	0	0.99370290	-0.00274344	0.00314855	-2.50188947
6	6	6	0.99433485	-0.00246734	0.00283257	-2.54781878	6	16	6	0.99402145	-0.00260424	0.00298927	-2.52443431	6	26	6	0.99369694	-0.00274487	0.00315018	-2.50166472
6	6	12	0.99433176	-0.00246869	0.00283412	-2.54758178	6	16	12	0.99401828	-0.00260563	0.00299086	-2.52420362	6	26	12	0.99369368	-0.00274629	0.00315181	-2.50144002
6	6	36	0.99431938	-0.00247409	0.00284031	-2.54663444	6	16	36	0.99400556	-0.00261119	0.00299722	-2.52328150	6	26	36	0.99368633	-0.00275200	0.00315834	-2.50054180
6	6	48	0.99431319	-0.00247680	0.00284341	-2.54616116	6	16	48	0.99399920	-0.00261397	0.00300040	-2.52282810	6	26	48	0.99367680	-0.00275485	0.00316160	-2.50009305
6	7	0	0.99430699	-0.00247951	0.00284650	-2.54568813	6	17	0	0.99399283	-0.00261675	0.00300358	-2.52236035	6	27	0	0.99367027	-0.00275771	0.00316487	-2.49964452
6	7	6	0.99430389	-0.00248086	0.00284805	-2.54545172	6	17	6	0.99398965	-0.00261814	0.00300518	-2.52213022	6	27	6	0.99366670	-0.00275913	0.00316650	-2.49942035
6	7	12	0.99430079	-0.00248222	0.00284960	-2.54521537	6	17	12	0.99398646	-0.00261953	0.00300677	-2.52190014	6	27	12	0.99366337	-0.00276056	0.00316814	-2.49919623
6	7	36	0.99428838	-0.00248764	0.00285581	-2.54427061	6	17	36	0.99397372	-0.00262610	0.00301314	-2.52098047	6	27	36	0.99365604	-0.00276628	0.00317468	-2.49830034
6	7	48	0.99428217	-0.00249035	0.00285892	-2.54379861	6	17	48	0.99396734	-0.00262789	0.00301633	-2.52052099	6	27	48	0.99364410	-0.00276914	0.00317795	-2.49785274
6	8	0	0.99427595	-0.00249306	0.00286202	-2.54332688	6	18	0	0.99396096	-0.00263068	0.00301952	-2.52006176	6	28	0	0.99363755	-0.00277201	0.00318123	-2.49740537
6	8	6	0.99427285	-0.00249442	0.00286358	-2.54309110	6	18	6	0.99395776	-0.00263207	0.00302112	-2.51983224	6	28	6	0.99363427	-0.00277344	0.00318287	-2.49718178
6	8	12	0.99426974	-0.00249578	0.00286513	-2.54285540	6	18	12	0.99395457	-0.00263347	0.00302272	-2.51960278	6	28	12	0.99363099	-0.00277487	0.00318450	-2.49695824
6	8	36	0.99425729	-0.00250122	0.00287135	-2.54191320	6	18	36	0.99394179	-0.00263905	0.00302911	-2.51868553	6	28	36	0.99361787	-0.00278060	0.00319106	-2.49606466
6	8	48	0.99425106	-0.00250394	0.00287447	-2.54144249	6	18	48	0.99393539	-0.00264184	0.00303230	-2.51822728	6	28	48	0.99361131	-0.00278347	0.00319434	-2.49561822
6	9	0	0.99424483	-0.00250666	0.00287758	-2.54097204	6	19	0	0.99392899	-0.00264464	0.00303550	-2.51776926	6	29	0	0.99360474	-0.00278634	0.00319763	-2.49517200
6	9	6	0.99424172	-0.00250802	0.00287914	-2.54073691	6	19	6	0.99392579	-0.00264604	0.00303710	-2.51754034	6	29	6	0.99360146	-0.00278778	0.00319927	-2.49494898
6	9	12	0.99423860	-0.00250938	0.00288070	-2.54050184	6	19	12	0.99392259	-0.00264744	0.00303870	-2.51731149	6	29	12	0.99359817	-0.00278922	0.00320091	-2.49472602
6	9	36	0.99422612	-0.00251483	0.00288694	-2.53956220	6	19	36	0.99391078	-0.00265304	0.00304511	-2.51639667	6	29	36	0.99359502	-0.00279496	0.00320749	-2.49438374
6	9	48	0.99421988	-0.00251756	0.00289006	-2.53909277	6	19	48	0.99390336	-0.00265584	0.00304832	-2.51593962	6	29	48	0.99357844	-0.00279784	0.00321078	-2.49389444
6	10	0	0.99421363	-0.00252029	0.00289319	-2.53862359	6	20	0	0.99389695	-0.00265864	0.00305153	-2.51548281	6	30	0	0.99357186	-0.00280072	0.00321407	-2.49344438
6	10	6	0.99421050	-0.00252165	0.00289475	-2.53838909	6	20	6	0.99389374	-0.00266005	0.00305313	-2.51525245	6	30	6	0.99356866	-0.00280216	0.00321572	-2.49297219
6	10	12	0.99420738	-0.00252302	0.00289631	-2.53815466	6	20	12	0.99389053	-0.00266145	0.00305474	-2.51502650	6	30	12	0.99356527	-0.00280360	0.00321737	-2.49249954
6	10	36	0.99419486	-0.00252848	0.00290257	-2.53721756	6	20	36	0.99387768	-0.00266706	0.00306116	-2.51411384	6	30	36	0.99355208	-0.00280936	0.00322396	-2.49161055
6	10	48	0.99418860	-0.00253122	0.00290570	-2.53674940	6	20	48	0.99387125	-0.00266987	0.00306438	-2.51365799	6	30	48	0.99354549	-0.00281225	0.00322726	-2.49116639

HAVERSINE TABLE

LOG				LOG				LOG				LOG								
O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE	O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE	O	'	"	COSINE	COSINE	HAVERSINE	HAVERSINE
7	0	0	0.99254615	-0.00324929	0.00372692	-2.42864944	7	11	0	0.99215112	-0.00342217	0.00392444	-2.40622216	7	21	0	0.99178318	-0.00358326	0.00410841	-2.38632623
7	1	6	0.99250711	-0.00326638	0.00374645	-2.42638037	7	11	6	0.99214748	-0.00342377	0.00392626	-2.40620292	7	21	6	0.99177946	-0.00358489	0.00411027	-2.38612956
7	1	12	0.99250355	-0.00326793	0.00374822	-2.42617439	7	11	12	0.99214384	-0.00342536	0.00392808	-2.40581972	7	21	12	0.99177574	-0.00358652	0.00411213	-2.38593294
7	1	18	0.99249932	-0.00327416	0.00375534	-2.42535094	7	11	18	0.99213984	-0.00343173	0.00393536	-2.40501541	7	21	18	0.99177204	-0.00358815	0.00411398	-2.38571469
7	1	24	0.99249520	-0.00327727	0.00375890	-2.42493951	7	11	24	0.99213599	-0.00343812	0.00394265	-2.40461354	7	21	24	0.99176834	-0.00358978	0.00411583	-2.38550036
7	2	0	0.99249108	-0.00328039	0.00376246	-2.42452828	7	12	0	0.99213214	-0.00344451	0.00394994	-2.40421185	7	22	0	0.99176464	-0.00359141	0.00411768	-2.38528603
7	2	6	0.99248696	-0.00328351	0.00376602	-2.42411724	7	12	6	0.99212829	-0.00345090	0.00395723	-2.40381035	7	22	6	0.99176094	-0.00359304	0.00411952	-2.38507170
7	2	12	0.99248284	-0.00328653	0.00376958	-2.42370620	7	12	12	0.99212444	-0.00345729	0.00396452	-2.40340886	7	22	12	0.99175724	-0.00359467	0.00412136	-2.38485727
7	2	18	0.99247872	-0.00328955	0.00377315	-2.42329515	7	12	18	0.99212059	-0.00346368	0.00397181	-2.40300737	7	22	18	0.99175354	-0.00359630	0.00412320	-2.38464284
7	2	24	0.99247460	-0.00329257	0.00377672	-2.42288410	7	12	24	0.99211674	-0.00346969	0.00397905	-2.40260588	7	22	24	0.99174984	-0.00359793	0.00412504	-2.38442841
7	3	0	0.99247048	-0.00329559	0.00378029	-2.42247305	7	13	0	0.99211289	-0.00347610	0.00398629	-2.40220439	7	23	0	0.99174614	-0.00359956	0.00412688	-2.38421398
7	3	6	0.99246636	-0.00329861	0.00378386	-2.42206200	7	13	6	0.99210904	-0.00348251	0.00399353	-2.40180290	7	23	6	0.99174244	-0.00360119	0.00412872	-2.38399955
7	3	12	0.99246224	-0.00330163	0.00378743	-2.42165095	7	13	12	0.99210519	-0.00348892	0.00399999	-2.40140141	7	23	12	0.99173874	-0.00360282	0.00413056	-2.38378512
7	3	18	0.99245812	-0.00330465	0.00379101	-2.42123990	7	13	18	0.99210134	-0.00349533	0.00400645	-2.40100000	7	23	18	0.99173504	-0.00360445	0.00413240	-2.38357067
7	3	24	0.99245400	-0.00330767	0.00379458	-2.42082885	7	13	24	0.99209749	-0.00350174	0.00401291	-2.40060000	7	23	24	0.99173134	-0.00360608	0.00413424	-2.38335622
7	4	0	0.99244988	-0.00331069	0.00379815	-2.42041780	7	14	0	0.99209364	-0.00350815	0.00401937	-2.40020000	7	24	0	0.99172764	-0.00360771	0.00413608	-2.38314177
7	4	6	0.99244576	-0.00331371	0.00380172	-2.42000675	7	14	6	0.99208979	-0.00351456	0.00402583	-2.39980000	7	24	6	0.99172394	-0.00360934	0.00413792	-2.38292732
7	4	12	0.99244164	-0.00331673	0.00380479	-2.41959570	7	14	12	0.99208594	-0.00352097	0.00403229	-2.39940000	7	24	12	0.99172024	-0.00361097	0.00413976	-2.38271287
7	4	18	0.99243752	-0.00331975	0.00380786	-2.41918465	7	14	18	0.99208209	-0.00352738	0.00403875	-2.39900000	7	24	18	0.99171654	-0.00361260	0.00414160	-2.38249842
7	4	24	0.99243340	-0.00332277	0.00381093	-2.41877360	7	14	24	0.99207824	-0.00353379	0.00404521	-2.39860000	7	24	24	0.99171284	-0.00361423	0.00414344	-2.38228397
7	5	0	0.99242928	-0.00332579	0.00381400	-2.41836255	7	15	0	0.99207439	-0.00354020	0.00405167	-2.39820000	7	25	0	0.99170914	-0.00361586	0.00414528	-2.38206952
7	5	6	0.99242516	-0.00332881	0.00381707	-2.41795150	7	15	6	0.99207054	-0.00354661	0.00405813	-2.39780000	7	25	6	0.99170544	-0.00361749	0.00414712	-2.38185507
7	5	12	0.99242104	-0.00333183	0.00382014	-2.41754045	7	15	12	0.99206669	-0.00355302	0.00406459	-2.39740000	7	25	12	0.99170174	-0.00361912	0.00414896	-2.38164062
7	5	18	0.99241692	-0.00333485	0.00382321	-2.41712940	7	15	18	0.99206284	-0.00355943	0.00407105	-2.39700000	7	25	18	0.99169804	-0.00362075	0.00415080	-2.38142617
7	5	24	0.99241280	-0.00333787	0.00382628	-2.41671835	7	15	24	0.99205899	-0.00356584	0.00407751	-2.39660000	7	25	24	0.99169434	-0.00362238	0.00415264	-2.38121172
7	6	0	0.99240868	-0.00334089	0.00382935	-2.41630730	7	16	0	0.99205514	-0.00357225	0.00408397	-2.39620000	7	26	0	0.99169064	-0.00362401	0.00415448	-2.38099727
7	6	6	0.99240456	-0.00334391	0.00383242	-2.41589625	7	16	6	0.99205129	-0.00357866	0.00409043	-2.39580000	7	26	6	0.99168694	-0.00362564	0.00415632	-2.38078282
7	6	12	0.99240044	-0.00334693	0.00383549	-2.41548520	7	16	12	0.99204744	-0.00358507	0.00409689	-2.39540000	7	26	12	0.99168324	-0.00362727	0.00415816	-2.38056837
7	6	18	0.99239632	-0.00334995	0.00383856	-2.41507415	7	16	18	0.99204359	-0.00359148	0.00410335	-2.39500000	7	26	18	0.99167954	-0.00362890	0.00416000	-2.38035392
7	6	24	0.99239220	-0.00335297	0.00384163	-2.41466310	7	16	24	0.99203974	-0.00359789	0.00410981	-2.39460000	7	26	24	0.99167584	-0.00363053	0.00416184	-2.38013947
7	7	0	0.99238808	-0.00335599	0.00384470	-2.41425205	7	17	0	0.99203589	-0.00360430	0.00411627	-2.39420000	7	27	0	0.99167214	-0.00363216	0.00416368	-2.37992502
7	7	6	0.99238396	-0.00335901	0.00384777	-2.41384100	7	17	6	0.99203204	-0.00361071	0.00412273	-2.39380000	7	27	6	0.99166844	-0.00363379	0.00416552	-2.37971057
7	7	12	0.99237984	-0.00336203	0.00385084	-2.41343000	7	17	12	0.99202819	-0.00361712	0.00412919	-2.39340000	7	27	12	0.99166474	-0.00363542	0.00416736	-2.37949612
7	7	18	0.99237572	-0.00336505	0.00385391	-2.41301900	7	17	18	0.99202434	-0.00362353	0.00413565	-2.39300000	7	27	18	0.99166104	-0.00363705	0.00416920	-2.37928167
7	7	24	0.99237160	-0.00336807	0.00385698	-2.41260800	7	17	24	0.99202049	-0.00362994	0.00414211	-2.39260000	7	27	24	0.99165734	-0.00363868	0.00417104	-2.37906722
7	8	0	0.99236748	-0.00337109	0.00386005	-2.41219700	7	18	0	0.99201664	-0.00363635	0.00414857	-2.39220000	7	28	0	0.99165364	-0.00364031	0.00417288	-2.37885277
7	8	6	0.99236336	-0.00337411	0.00386312	-2.41178600	7	18	6	0.99201279	-0.00364276	0.00415503	-2.39180000	7	28	6	0.99164994	-0.00364194	0.00417472	-2.37863832
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7	8	24	0.99235100	-0.00338317	0.00387233	-2.41055300	7	18	24	0.99200124	-0.00366200	0.00417441	-2.39060000	7	28	24	0.99163884	-0.00364683	0.00418024	-2.37799497
7	9	0	0.99234688	-0.00338619	0.00387540	-2.41014200	7	19	0	0.99199739	-0.00366841	0.00418081	-2.39020000	7	29	0	0.99163514	-0.00364846	0.00418208	-2.37778052
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7	9	18	0.99233452	-0.00339525	0.00388461	-2.40890900	7	19	18	0.99198584	-0.00368764	0.00419959	-2.38900000	7	29	18	0.99162404	-0.00365335	0.00418760	-2.37713717
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7	10	0	0.99232628	-0.00340129	0.00389075	-2.40808700	7	20	0	0.99197814	-0.00370046	0.00421127	-2.38820000	7	30	0	0.99161664	-0.00365661	0.00419128	-2.37670827
7	10	6	0.99232216	-0.00340431	0.00389382	-2.40767600	7	20	6	0.99197429	-0.00370687	0.00421713	-2.38780000	7	30	6	0.99161294	-0.00365824	0.00419312	-2.37649382
7	10	12	0.99231804	-0.00340733	0.00389689	-2.40726500	7	20	12	0.99197044	-0.00371328	0.00422299	-2.38740000	7	30	12	0.99160924	-0.00365987	0.00419496	-2.37627937
7	10	18	0.99231392	-0.00341035	0.00389996	-2.40685400	7	20	18	0.99196659	-0.00371969	0.00422885	-2.38700000	7	30	18	0.99160554	-0.00366150	0.00419680	-2.37606492
7	10	24	0.99230980	-0.00341337	0.00390303	-2.40644300	7	20	24	0.99196274	-0.00372610	0.00423471	-2.38660000	7	30	24</				

HAVERSINE TABLE

LOG COSINE				LOG HAVERSINE				LOG COSINE				LOG HAVERSINE								
O	'	"		O	'	"		O	'	"		O	'	"						
0	0	0	0.99026807	-0.00442722	0.00486597	-2.31283096	0	11	0	0.98981768	-0.00444479	0.00509116	-2.29318317	0	21	0	0.98939944	-0.00462834	0.00530028	-2.27570110
8	1	6	0.99022349	-0.004426678	0.00488826	-2.31084596	8	11	6	0.98981354	-0.00444661	0.00509323	-2.29300659	8	21	6	0.98939521	-0.00463020	0.00530239	-2.27552805
8	1	12	0.99021943	-0.004426256	0.00490929	-2.31066573	8	11	12	0.98980940	-0.00444843	0.00509530	-2.29283004	8	21	12	0.98939099	-0.00463205	0.00530451	-2.27535504
8	1	36	0.99020319	-0.004427568	0.00489841	-2.30994519	8	11	36	0.98979282	-0.00445570	0.00510359	-2.29212422	8	21	36	0.98937468	-0.00463947	0.00531296	-2.27466333
8	1	48	0.99019506	-0.004427924	0.00490247	-2.30958515	8	11	48	0.98978453	-0.00445934	0.00510757	-2.29177152	8	21	48	0.98936502	-0.00464319	0.00531719	-2.27431769
8	2	0	0.99018693	-0.004428281	0.00490653	-2.30922526	8	12	0	0.98977623	-0.00446298	0.00511186	-2.29141896	8	22	0	0.98935715	-0.00464690	0.00532142	-2.27397219
8	2	6	0.99018287	-0.004428459	0.00490857	-2.30904536	8	12	6	0.98977208	-0.00446648	0.00511396	-2.29124274	8	22	6	0.98935292	-0.00464876	0.00532354	-2.27379948
8	2	12	0.99017880	-0.004428638	0.00491060	-2.30886551	8	12	12	0.98976793	-0.00446662	0.00511603	-2.29106655	8	22	12	0.98934879	-0.00465062	0.00532566	-2.27362682
8	2	36	0.99016253	-0.00442935	0.00491874	-2.30814647	8	12	36	0.98975132	-0.00447391	0.00512434	-2.29036216	8	22	36	0.98933164	-0.00465806	0.00533413	-2.27293650
8	2	48	0.99015439	-0.004429708	0.00492281	-2.30778717	8	12	48	0.98974301	-0.00447756	0.00512849	-2.29001018	8	22	48	0.98932327	-0.00466178	0.00533837	-2.27259154
8	3	0	0.99014624	-0.004430066	0.00492688	-2.30742803	8	13	0	0.98973470	-0.00448120	0.00513265	-2.28965835	8	23	0	0.98931478	-0.00466550	0.00534261	-2.27224673
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8	3	12	0.99013809	-0.004430423	0.00493095	-2.30706903	8	13	12	0.98972638	-0.00448485	0.00513681	-2.28930665	8	23	12	0.98930630	-0.00466922	0.00534685	-2.27190250
8	3	36	0.99012178	-0.004431138	0.00493911	-2.30635148	8	13	36	0.98970974	-0.00449216	0.00514513	-2.28860370	8	23	36	0.98929892	-0.00467668	0.00535534	-2.27121311
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8	6	6	0.99001956	-0.004435623	0.00499022	-2.30188025	8	16	6	0.98960544	-0.00453793	0.00519729	-2.28423313	8	26	6	0.98918291	-0.00472339	0.00540854	-2.26691931
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8	10	6	0.98985491	-0.00442846	0.00507255	-2.29477405	8	20	6	0.98943742	-0.00461167	0.00528129	-2.27726008	8	30	6	0.98901156	-0.00479863	0.00549422	-2.26009409
8	10	12	0.98985078	-0.00443027	0.00507461	-2.29459714	8	20	12	0.98943321	-0.00461352	0.00528340	-2.27708672	8	30	12	0.98900726	-0.00480052	0.00549637	-2.25992444
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