

$\theta \leq 180^\circ$	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°	
0'	. <u>1</u> 6699	. <u>1</u> 7142	. <u>1</u> 7598	. <u>1</u> 8066	. <u>1</u> 8548	. <u>1</u> 9042	. <u>1</u> 9549	,10068	,10599	,11143	60'
2'	. <u>1</u> 6713	. <u>1</u> 7157	. <u>1</u> 7613	. <u>1</u> 8082	. <u>1</u> 8564	. <u>1</u> 9059	. <u>1</u> 9566	,10086	,10617	,11161	58'
4'	. <u>1</u> 6728	. <u>1</u> 7172	. <u>1</u> 7628	. <u>1</u> 8098	. <u>1</u> 8581	. <u>1</u> 9076	. <u>1</u> 9583	,10103	,10635	,11179	56'
6'	. <u>1</u> 6742	. <u>1</u> 7187	. <u>1</u> 7644	. <u>1</u> 8114	. <u>1</u> 8597	. <u>1</u> 9093	. <u>1</u> 9601	,10121	,10653	,11198	54'
8'	. <u>1</u> 6757	. <u>1</u> 7202	. <u>1</u> 7659	. <u>1</u> 8130	. <u>1</u> 8613	. <u>1</u> 9109	. <u>1</u> 9618	,10138	,10671	,11216	52'
10'	.<u>1</u>6772	.<u>1</u>7217	.<u>1</u>7675	.<u>1</u>8146	.<u>1</u>8630	.<u>1</u>9126	.<u>1</u>9635	,10156	,10689	,11234	50'
12'	. <u>1</u> 6786	. <u>1</u> 7232	. <u>1</u> 7690	. <u>1</u> 8162	. <u>1</u> 8646	. <u>1</u> 9143	. <u>1</u> 9652	,10174	,10707	,11253	48'
14'	. <u>1</u> 6801	. <u>1</u> 7247	. <u>1</u> 7706	. <u>1</u> 8178	. <u>1</u> 8662	. <u>1</u> 9160	. <u>1</u> 9669	,10191	,10725	,11271	46'
16'	. <u>1</u> 6816	. <u>1</u> 7262	. <u>1</u> 7721	. <u>1</u> 8194	. <u>1</u> 8679	. <u>1</u> 9176	. <u>1</u> 9686	,10209	,10743	,11290	44'
18'	. <u>1</u> 6830	. <u>1</u> 7277	. <u>1</u> 7737	. <u>1</u> 8210	. <u>1</u> 8695	. <u>1</u> 9193	. <u>1</u> 9704	,10226	,10761	,11308	42'
20'	.<u>1</u>6845	.<u>1</u>7292	.<u>1</u>7752	.<u>1</u>8226	.<u>1</u>8711	.<u>1</u>9210	.<u>1</u>9721	,10244	,10779	,11326	40'
22'	. <u>1</u> 6860	. <u>1</u> 7307	. <u>1</u> 7768	. <u>1</u> 8242	. <u>1</u> 8728	. <u>1</u> 9227	. <u>1</u> 9738	,10262	,10797	,11345	38'
24'	. <u>1</u> 6874	. <u>1</u> 7322	. <u>1</u> 7784	. <u>1</u> 8258	. <u>1</u> 8744	. <u>1</u> 9244	. <u>1</u> 9755	,10279	,10815	,11363	36'
26'	. <u>1</u> 6889	. <u>1</u> 7338	. <u>1</u> 7799	. <u>1</u> 8274	. <u>1</u> 8761	. <u>1</u> 9260	. <u>1</u> 9773	,10297	,10833	,11382	34'
28'	. <u>1</u> 6904	. <u>1</u> 7353	. <u>1</u> 7815	. <u>1</u> 8290	. <u>1</u> 8777	. <u>1</u> 9277	. <u>1</u> 9790	,10315	,10851	,11400	32'
30'	.<u>1</u>6919	.<u>1</u>7368	.<u>1</u>7830	.<u>1</u>8306	.<u>1</u>8794	.<u>1</u>9294	.<u>1</u>9807	,10332	,10870	,11419	30'
32'	. <u>1</u> 6933	. <u>1</u> 7383	. <u>1</u> 7846	. <u>1</u> 8322	. <u>1</u> 8810	. <u>1</u> 9311	. <u>1</u> 9824	,10350	,10888	,11437	28'
34'	. <u>1</u> 6948	. <u>1</u> 7398	. <u>1</u> 7862	. <u>1</u> 8338	. <u>1</u> 8827	. <u>1</u> 9328	. <u>1</u> 9842	,10368	,10906	,11456	26'
36'	. <u>1</u> 6963	. <u>1</u> 7414	. <u>1</u> 7877	. <u>1</u> 8354	. <u>1</u> 8843	. <u>1</u> 9345	. <u>1</u> 9859	,10386	,10924	,11474	24'
38'	. <u>1</u> 6978	. <u>1</u> 7429	. <u>1</u> 7893	. <u>1</u> 8370	. <u>1</u> 8860	. <u>1</u> 9362	. <u>1</u> 9876	,10403	,10942	,11493	22'
40'	.<u>1</u>6993	.<u>1</u>7444	.<u>1</u>7909	.<u>1</u>8386	.<u>1</u>8876	.<u>1</u>9379	.<u>1</u>9894	,10421	,10960	,11511	20'
42'	. <u>1</u> 7007	. <u>1</u> 7459	. <u>1</u> 7924	. <u>1</u> 8402	. <u>1</u> 8893	. <u>1</u> 9396	. <u>1</u> 9911	,10439	,10978	,11530	18'
44'	. <u>1</u> 7022	. <u>1</u> 7475	. <u>1</u> 7940	. <u>1</u> 8418	. <u>1</u> 8909	. <u>1</u> 9413	. <u>1</u> 9929	,10457	,10997	,11549	16'
46'	. <u>1</u> 7037	. <u>1</u> 7490	. <u>1</u> 7956	. <u>1</u> 8435	. <u>1</u> 8926	. <u>1</u> 9430	. <u>1</u> 9946	,10474	,11015	,11567	14'
48'	. <u>1</u> 7052	. <u>1</u> 7505	. <u>1</u> 7972	. <u>1</u> 8451	. <u>1</u> 8943	. <u>1</u> 9447	. <u>1</u> 9963	,10492	,11033	,11586	12'
50'	.<u>1</u>7067	.<u>1</u>7521	.<u>1</u>7987	.<u>1</u>8467	.<u>1</u>8959	.<u>1</u>9464	.<u>1</u>9981	,10510	,11051	,11604	10'
52'	. <u>1</u> 7082	. <u>1</u> 7536	. <u>1</u> 8003	. <u>1</u> 8483	. <u>1</u> 8976	. <u>1</u> 9481	. <u>1</u> 9998	,10528	,11070	,11623	8'
54'	. <u>1</u> 7097	. <u>1</u> 7551	. <u>1</u> 8019	. <u>1</u> 8499	. <u>1</u> 8992	. <u>1</u> 9498	,10016	,10546	,11088	,11642	6'
56'	. <u>1</u> 7112	. <u>1</u> 7567	. <u>1</u> 8035	. <u>1</u> 8516	. <u>1</u> 9009	. <u>1</u> 9515	,10033	,10564	,11106	,11660	4'
58'	. <u>1</u> 7127	. <u>1</u> 7582	. <u>1</u> 8051	. <u>1</u> 8532	. <u>1</u> 9026	. <u>1</u> 9532	,10051	,10582	,11124	,11679	2'
60'	.<u>1</u>7142	.<u>1</u>7598	.<u>1</u>8066	.<u>1</u>8548	.<u>1</u>9042	.<u>1</u>9549	,10068	,10599	,11143	,11698	0'
	329°	328°	327°	326°	325°	324°	323°	322°	321°	320°	$180^\circ \leq \theta$

Usage: $\text{hav}(326^\circ 32') = \text{hav}(33^\circ 28') = 0.0829$ denoted as $.18290$

$\text{hav}(323^\circ 06') = \text{hav}(36^\circ 54') = 0.10016$ denoted as $0,10016$

$\theta \leq 180^\circ$	140°	141°	142°	143°	144°	145°	146°	147°	148°	149°	
0'	,88302	,88857	,89401	,89932	. $\bar{1}$ 0451	. $\bar{1}$ 0958	. $\bar{1}$ 1452	. $\bar{1}$ 1934	. $\bar{1}$ 2402	. $\bar{1}$ 2858	60'
2'	,88321	,88876	,89418	,89949	. $\bar{1}$ 0468	. $\bar{1}$ 0974	. $\bar{1}$ 1468	. $\bar{1}$ 1949	. $\bar{1}$ 2418	. $\bar{1}$ 2873	58'
4'	,88340	,88894	,89436	,89967	. $\bar{1}$ 0485	. $\bar{1}$ 0991	. $\bar{1}$ 1484	. $\bar{1}$ 1965	. $\bar{1}$ 2433	. $\bar{1}$ 2888	56'
6'	,88358	,88912	,89454	,89984	. $\bar{1}$ 0502	. $\bar{1}$ 1008	. $\bar{1}$ 1501	. $\bar{1}$ 1981	. $\bar{1}$ 2449	. $\bar{1}$ 2903	54'
8'	,88377	,88930	,89472	. $\bar{1}$ 0002	. $\bar{1}$ 0519	. $\bar{1}$ 1024	. $\bar{1}$ 1517	. $\bar{1}$ 1997	. $\bar{1}$ 2464	. $\bar{1}$ 2918	52'
10'	,88396	,88949	,89490	.$\bar{1}$0019	.$\bar{1}$0536	.$\bar{1}$1041	.$\bar{1}$1533	.$\bar{1}$2013	.$\bar{1}$2479	.$\bar{1}$2933	50'
12'	,88414	,88967	,89508	. $\bar{1}$ 0037	. $\bar{1}$ 0553	. $\bar{1}$ 1057	. $\bar{1}$ 1549	. $\bar{1}$ 2028	. $\bar{1}$ 2495	. $\bar{1}$ 2948	48'
14'	,88433	,88985	,89526	. $\bar{1}$ 0054	. $\bar{1}$ 0570	. $\bar{1}$ 1074	. $\bar{1}$ 1565	. $\bar{1}$ 2044	. $\bar{1}$ 2510	. $\bar{1}$ 2963	46'
16'	,88451	,89003	,89543	. $\bar{1}$ 0071	. $\bar{1}$ 0587	. $\bar{1}$ 1091	. $\bar{1}$ 1582	. $\bar{1}$ 2060	. $\bar{1}$ 2525	. $\bar{1}$ 2978	44'
18'	,88470	,89022	,89561	. $\bar{1}$ 0089	. $\bar{1}$ 0604	. $\bar{1}$ 1107	. $\bar{1}$ 1598	. $\bar{1}$ 2076	. $\bar{1}$ 2541	. $\bar{1}$ 2993	42'
20'	,88489	,89040	,89579	.$\bar{1}$0106	.$\bar{1}$0621	.$\bar{1}$1124	.$\bar{1}$1614	.$\bar{1}$2091	.$\bar{1}$2556	.$\bar{1}$3007	40'
22'	,88507	,89058	,89597	. $\bar{1}$ 0124	. $\bar{1}$ 0638	. $\bar{1}$ 1140	. $\bar{1}$ 1630	. $\bar{1}$ 2107	. $\bar{1}$ 2571	. $\bar{1}$ 3022	38'
24'	,88526	,89076	,89614	. $\bar{1}$ 0141	. $\bar{1}$ 0655	. $\bar{1}$ 1157	. $\bar{1}$ 1646	. $\bar{1}$ 2123	. $\bar{1}$ 2586	. $\bar{1}$ 3037	36'
26'	,88544	,89094	,89632	. $\bar{1}$ 0158	. $\bar{1}$ 0672	. $\bar{1}$ 1173	. $\bar{1}$ 1662	. $\bar{1}$ 2138	. $\bar{1}$ 2602	. $\bar{1}$ 3052	34'
28'	,88563	,89112	,89650	. $\bar{1}$ 0176	. $\bar{1}$ 0689	. $\bar{1}$ 1190	. $\bar{1}$ 1678	. $\bar{1}$ 2154	. $\bar{1}$ 2617	. $\bar{1}$ 3067	32'
30'	,88581	,89130	,89668	.$\bar{1}$0193	.$\bar{1}$0706	.$\bar{1}$1206	.$\bar{1}$1694	.$\bar{1}$2170	.$\bar{1}$2632	.$\bar{1}$3081	30'
32'	,88600	,89149	,89685	. $\bar{1}$ 0210	. $\bar{1}$ 0723	. $\bar{1}$ 1223	. $\bar{1}$ 1710	. $\bar{1}$ 2185	. $\bar{1}$ 2647	. $\bar{1}$ 3096	28'
34'	,88618	,89167	,89703	. $\bar{1}$ 0227	. $\bar{1}$ 0740	. $\bar{1}$ 1239	. $\bar{1}$ 1726	. $\bar{1}$ 2201	. $\bar{1}$ 2662	. $\bar{1}$ 3111	26'
36'	,88637	,89185	,89721	. $\bar{1}$ 0245	. $\bar{1}$ 0756	. $\bar{1}$ 1256	. $\bar{1}$ 1742	. $\bar{1}$ 2216	. $\bar{1}$ 2678	. $\bar{1}$ 3126	24'
38'	,88655	,89203	,89738	. $\bar{1}$ 0262	. $\bar{1}$ 0773	. $\bar{1}$ 1272	. $\bar{1}$ 1758	. $\bar{1}$ 2232	. $\bar{1}$ 2693	. $\bar{1}$ 3140	22'
40'	,88674	,89221	,89756	.$\bar{1}$0279	.$\bar{1}$0790	.$\bar{1}$1289	.$\bar{1}$1774	.$\bar{1}$2248	.$\bar{1}$2708	.$\bar{1}$3155	20'
42'	,88692	,89239	,89774	. $\bar{1}$ 0296	. $\bar{1}$ 0807	. $\bar{1}$ 1305	. $\bar{1}$ 1790	. $\bar{1}$ 2263	. $\bar{1}$ 2723	. $\bar{1}$ 3170	18'
44'	,88710	,89257	,89791	. $\bar{1}$ 0314	. $\bar{1}$ 0824	. $\bar{1}$ 1321	. $\bar{1}$ 1806	. $\bar{1}$ 2279	. $\bar{1}$ 2738	. $\bar{1}$ 3184	16'
46'	,88729	,89275	,89809	. $\bar{1}$ 0331	. $\bar{1}$ 0840	. $\bar{1}$ 1338	. $\bar{1}$ 1822	. $\bar{1}$ 2294	. $\bar{1}$ 2753	. $\bar{1}$ 3199	14'
48'	,88747	,89293	,89826	. $\bar{1}$ 0348	. $\bar{1}$ 0857	. $\bar{1}$ 1354	. $\bar{1}$ 1838	. $\bar{1}$ 2310	. $\bar{1}$ 2768	. $\bar{1}$ 3214	12'
50'	,88766	,89311	,89844	.$\bar{1}$0365	.$\bar{1}$0874	.$\bar{1}$1370	.$\bar{1}$1854	.$\bar{1}$2325	.$\bar{1}$2783	.$\bar{1}$3228	10'
52'	,88784	,89329	,89862	. $\bar{1}$ 0382	. $\bar{1}$ 0891	. $\bar{1}$ 1387	. $\bar{1}$ 1870	. $\bar{1}$ 2341	. $\bar{1}$ 2798	. $\bar{1}$ 3243	8'
54'	,88802	,89347	,89879	. $\bar{1}$ 0399	. $\bar{1}$ 0907	. $\bar{1}$ 1403	. $\bar{1}$ 1886	. $\bar{1}$ 2356	. $\bar{1}$ 2813	. $\bar{1}$ 3258	6'
56'	,88821	,89365	,89897	. $\bar{1}$ 0417	. $\bar{1}$ 0924	. $\bar{1}$ 1419	. $\bar{1}$ 1902	. $\bar{1}$ 2372	. $\bar{1}$ 2828	. $\bar{1}$ 3272	4'
58'	,88839	,89383	,89914	. $\bar{1}$ 0434	. $\bar{1}$ 0941	. $\bar{1}$ 1436	. $\bar{1}$ 1918	. $\bar{1}$ 2387	. $\bar{1}$ 2843	. $\bar{1}$ 3287	2'
60'	,88857	,89401	,89932	.$\bar{1}$0451	.$\bar{1}$0958	.$\bar{1}$1452	.$\bar{1}$1934	.$\bar{1}$2402	.$\bar{1}$2858	.$\bar{1}$3301	0'
	219°	218°	217°	216°	215°	214°	213°	212°	211°	210°	$180^\circ \leq \theta$

Usage: $\text{hav}(216^\circ 52') = \text{hav}(143^\circ 08') = 0.90002$ denoted as $\bar{1}0002$

$\text{hav}(216^\circ 54') = \text{hav}(143^\circ 06') = 0.89984$ denoted as ,89984