

Grassmannian packings

maintained by Henry Cohn

This table of Grassmannian packings was created by N. J. A. Sloane based on joint work with R. H. Hardin and J. H. Conway in *Packing lines, planes, etc.: packings in Grassmannian spaces* (Experiment. Math. **5** (1996), 139–159, <https://projecteuclid.org/euclid.em/1047565645>). Sloane has since retired from AT&T Labs, and I've taken over maintaining the table. Please let me know if you can improve on any of these records.

See [the paper](#) for definitions and background. The squared chordal distance column lists the largest value known for any packing of N subspaces of dimension n in m dimensions, while the bound column lists the minimum of the simplex and orthoplex bounds from Section 5 of the paper and the trivial upper bound $d^2 \leq n$. This upper bound is always rounded up, while the squared chordal distance is rounded down. Cases in which these bounds agree up to rounding are marked with \star , and the notes column gives credit for improvements to the original table or further information, such as whether the listed upper bound is tight (i.e., whether there exists a code that exactly meets the bound).

The file `GrassmannianData.tar` is a tar file containing files with the coordinates for all these packings. The file names are of the form m - n - N .`txt`, and the files list one vector per line, with m coordinates separated by commas. The first n lines specify an orthonormal basis for the first subspace, and so on.

PACKINGS OF N SUBSPACES OF DIMENSION n IN m DIMENSIONS

m	n	N	Squared chordal distance	Bound	Notes	
\star	3	1	3	0.9999999999	1.0000000000	tight bound
\star	3	1	4	0.8888888888	0.8888888889	tight bound
	3	1	5	0.7999999999	0.8333333334	
\star	3	1	6	0.7999999999	0.8000000000	tight bound
\star	3	1	7	0.6666666666	0.6666666667	tight bound
	3	1	8	0.5806285146	0.6666666667	
	3	1	9	0.5519540855	0.6666666667	
	3	1	10	0.5292109924	0.6666666667	
	3	1	11	0.4895833489		
	3	1	12	0.4456887214		
	3	1	13	0.4099649711		
	3	1	14	0.3906289921		
	3	1	15	0.3813256141		
	3	1	16	0.3685242696		
	3	1	17	0.3328546988		
	3	1	18	0.3193305211		
	3	1	19	0.3000093877		
	3	1	20	0.2919740686		Henry Cohn, 2023
	3	1	21	0.2842099468		
	3	1	22	0.2793283319		Henry Cohn, 2023
	3	1	23	0.2576904035		
	3	1	24	0.2524640360		
	3	1	25	0.2387298379		
	3	1	26	0.2308008695		Henry Cohn, 2024
	3	1	27	0.2240235782		
	3	1	28	0.2181978117		
	3	1	29	0.2135612070		Henry Cohn, 2023
	3	1	30	0.2060838295		
	3	1	31	0.1990747916		Henry Cohn, 2023
	3	1	32	0.1914782380		

3	1	33	0.1863557638	
3	1	34	0.1820514756	
3	1	35	0.1768735418	
3	1	36	0.1729747303	Henry Cohn, 2023
3	1	37	0.1691598522	Henry Cohn, 2024
3	1	38	0.1665869354	Henry Cohn, 2024
3	1	39	0.1634073776	
3	1	40	0.1568275595	
3	1	41	0.1525644706	
3	1	42	0.1490203035	Henry Cohn, 2023
3	1	43	0.1469199238	Henry Cohn, 2025
3	1	44	0.1427787500	
3	1	45	0.1409157797	Henry Cohn, 2024
3	1	46	0.1384267791	
3	1	47	0.1362449197	Henry Cohn, 2025
3	1	48	0.1339227101	
3	1	49	0.1303178440	Henry Cohn, 2023
3	1	50	0.1271717953	
3	1	51	0.1248341142	Henry Cohn, 2025
3	1	52	0.1225478939	Henry Cohn, 2025
3	1	53	0.1200068656	
3	1	54	0.1187276434	
3	1	55	0.1182184210	Henry Cohn, 2025
3	1	56	0.1153881344	
3	1	57	0.1130094390	Henry Cohn, 2024
3	1	58	0.1112963897	
3	1	59	0.1094202828	
3	1	60	0.1079786078	
3	1	61	0.1058337052	
3	1	62	0.1040628389	
3	1	63	0.1026596852	Henry Cohn, 2024
3	1	64	0.1007631182	
3	1	65	0.0995552862	Henry Cohn, 2024
3	1	66	0.0988730140	
3	1	67	0.0973798467	
3	1	68	0.0957307154	
3	1	69	0.0944620424	Henry Cohn, 2024
3	1	70	0.0931842175	Henry Cohn, 2025
3	1	71	0.0923400457	Henry Cohn, 2025
3	1	72	0.0907725757	Henry Cohn, 2024
3	1	73	0.0894325531	
3	1	74	0.0881099899	Henry Cohn, 2025
3	1	75	0.0873637664	Henry Cohn, 2024
3	1	76	0.0858021401	Henry Cohn, 2024
3	1	77	0.0847837362	Henry Cohn, 2024
3	1	78	0.0838816516	Henry Cohn, 2024
3	1	79	0.0829424657	Henry Cohn, 2024
3	1	80	0.0820619908	Henry Cohn, 2024
3	1	81	0.0816197151	
3	1	82	0.0800907073	Henry Cohn, 2024
3	1	83	0.0791280951	Henry Cohn, 2025

3	1	84	0.0782592507		Henry Cohn, 2025	
3	1	85	0.0772151335		Henry Cohn, 2024	
3	1	86	0.0762818491		Henry Cohn, 2024	
3	1	87	0.0753880851		Henry Cohn, 2024	
3	1	88	0.0745983218		Henry Cohn, 2025	
3	1	89	0.0737475124		Henry Cohn, 2024	
3	1	90	0.0729197231		Henry Cohn, 2024	
3	1	91	0.0721306421		Henry Cohn, 2024	
3	1	92	0.0714686162		Henry Cohn, 2024	
3	1	93	0.0708630841		Henry Cohn, 2024	
3	1	94	0.0705147106		Henry Cohn, 2024	
3	1	95	0.0697193685		Henry Cohn, 2025	
3	1	96	0.0693820018		Henry Cohn, 2024	
3	1	97	0.0683016779		Henry Cohn, 2024	
3	1	98	0.0675501458		Henry Cohn, 2025	
3	1	99	0.0668607357			
3	1	100	0.0660334922		Henry Cohn, 2024	
*	4	1	3	0.9999999999	1.0000000000	tight bound
*	4	1	4	0.9999999999	1.0000000000	tight bound
*	4	1	5	0.9374999999	0.9375000000	tight bound
4	1	6	0.8888888888	0.9000000000		
4	1	7	0.8475970508	0.8750000000		
4	1	8	0.8284271247	0.8571428572		
4	1	9	0.8114195153	0.8437500000		
4	1	10	0.8114195153	0.8333333334		
*	4	1	11	0.7499999999	0.7500000000	tight bound
*	4	1	12	0.7499999999	0.7500000000	tight bound
4	1	13	0.6786070758	0.7500000000		
4	1	14	0.6518097061	0.7500000000		
4	1	15	0.6294363286	0.7500000000		
4	1	16	0.6180339887	0.7500000000		
4	1	17	0.6020261183	0.7500000000		
4	1	18	0.5946802049	0.7500000000		
4	1	19	0.5818451952			
4	1	20	0.5736095486			
4	1	21	0.5617658936		Henry Cohn, 2023	
4	1	22	0.5480896962			
4	1	23	0.5263485431			
4	1	24	0.5182842211			
4	1	25	0.4990787241		Henry Cohn, 2024	
4	1	26	0.4887185391			
4	1	27	0.4747566702			
4	1	28	0.4678482018			
4	1	29	0.4593349488			
4	1	30	0.4523404552		Henry Cohn, 2024	
4	1	31	0.4480651540		Henry Cohn, 2024	
4	1	32	0.4469610677			
4	1	33	0.4383367891		Henry Cohn, 2025	
4	1	34	0.4294553058		Henry Cohn, 2023	
4	1	35	0.4258134468		Henry Cohn, 2024	
4	1	36	0.4240825190		Henry Cohn, 2023	

4	1	37	0.4208973371	
4	1	38	0.4207805760	
4	1	39	0.4076830992	Henry Cohn, 2024
4	1	40	0.3964466094	
4	1	41	0.3881129259	Henry Cohn, 2024
4	1	42	0.3842853799	
4	1	43	0.3753741606	Henry Cohn, 2024
4	1	44	0.3680303751	Henry Cohn, 2024
4	1	45	0.3641925285	
4	1	46	0.3621764445	
4	1	47	0.3555499094	Henry Cohn, 2025
4	1	48	0.3514548200	Henry Cohn, 2025
4	1	49	0.3477892791	Henry Cohn, 2023
4	1	50	0.3468281123	Henry Cohn, 2023
4	1	51	0.3456505782	Henry Cohn, 2025
4	1	52	0.3455125356	Henry Cohn, 2025
4	1	53	0.3454915192	Henry Cohn, 2025
4	1	54	0.3454915028	
4	1	55	0.3454915028	
4	1	56	0.3454915028	
4	1	57	0.3454915028	
4	1	58	0.3454915028	
4	1	59	0.3454915028	
4	1	60	0.3454915028	
4	1	61	0.3105454289	Henry Cohn, 2025
4	1	62	0.3078403016	Henry Cohn, 2024
4	1	63	0.3057061005	Henry Cohn, 2025
4	1	64	0.3011051204	Henry Cohn, 2024
4	1	65	0.2981420632	Henry Cohn, 2025
4	1	66	0.2952448218	Henry Cohn, 2025
4	1	67	0.2924845812	Henry Cohn, 2024
4	1	68	0.2896638866	Henry Cohn, 2024
4	1	69	0.2867158162	Henry Cohn, 2024
4	1	70	0.2843020279	Henry Cohn, 2024
4	1	71	0.2808398454	Henry Cohn, 2025
4	1	72	0.2780138931	Henry Cohn, 2024
4	1	73	0.2757190113	Henry Cohn, 2024
4	1	74	0.2731426475	Henry Cohn, 2024
4	1	75	0.2711333377	
4	1	76	0.2705772291	
4	1	77	0.2669677977	Henry Cohn, 2025
4	1	78	0.2652983970	Henry Cohn, 2025
4	1	79	0.2634487978	Henry Cohn, 2025
4	1	80	0.2622051439	
4	1	81	0.2605350596	Henry Cohn, 2025
4	1	82	0.2590078935	Henry Cohn, 2024
4	1	83	0.2580022875	
4	1	84	0.2569464254	
4	1	85	0.2559903260	Henry Cohn, 2024
4	1	86	0.2541576422	
4	1	87	0.2531183733	

4	1	88	0.2517548171			
4	1	89	0.2500341112			
4	1	90	0.2489408103			
4	1	91	0.2478752232	Henry Cohn, 2025		
4	1	92	0.2462380417			
4	1	93	0.2431222205			
4	1	94	0.2415782915			
4	1	95	0.2410949781			
4	1	96	0.2402333903	Henry Cohn, 2024		
4	1	97	0.2396265587			
4	1	98	0.2360782975			
4	1	99	0.2330137509	Henry Cohn, 2024		
4	1	100	0.2313643538			
*	4	2	3	1.4999999999	1.5000000000	tight bound [5]
*	4	2	4	1.3333333333	1.3333333334	tight bound [5]
*	4	2	5	1.2499999999	1.2500000000	tight bound [5]
*	4	2	6	1.1999999999	1.2000000000	tight bound [5]
*	4	2	7	1.1666666666	1.1666666667	tight bound [4]
*	4	2	8	1.1428571428	1.1428571429	tight bound [4]
	4	2	9	1.1230624449	1.1250000000	
*	4	2	10	1.1111111111	1.1111111112	tight bound [5]
*	4	2	11	0.9999999999	1.0000000000	tight bound [5]
*	4	2	12	0.9999999999	1.0000000000	tight bound [5]
*	4	2	13	0.9999999999	1.0000000000	tight bound [5]
*	4	2	14	0.9999999999	1.0000000000	tight bound [5]
*	4	2	15	0.9999999999	1.0000000000	tight bound [5]
*	4	2	16	0.9999999999	1.0000000000	tight bound [5]
*	4	2	17	0.9999999999	1.0000000000	tight bound [5]
*	4	2	18	1.0000000000	1.0000000000	tight bound [5]
	4	2	19	0.9090909090		
	4	2	20	0.9090909090		
	4	2	21	0.8683658001		
	4	2	22	0.8628666150		
	4	2	23	0.8450645945		
	4	2	24	0.8371591062		
	4	2	25	0.8275329668		
	4	2	26	0.8143605100		
	4	2	27	0.8056026757		
	4	2	28	0.8004820811		
	4	2	29	0.7888843622		
	4	2	30	0.7809079178		
	4	2	31	0.7760213858		
	4	2	32	0.7690588539		
	4	2	33	0.7591707968		
	4	2	34	0.7548790292		
	4	2	35	0.7489100760		
	4	2	36	0.7476820831		
	4	2	37	0.7286336898		
	4	2	38	0.7197930166		
	4	2	39	0.7095125538		
	4	2	40	0.7066332130		

4	2	41	0.6991501607
4	2	42	0.6948392861
4	2	43	0.6873492339
4	2	44	0.6830542529
4	2	45	0.6809212206
4	2	46	0.6793062616
4	2	47	0.6732073544
4	2	48	0.6666666666
4	2	49	0.6666666666
4	2	50	0.6666666666
4	2	51	0.6451736243
4	2	52	0.6418388415
4	2	53	0.6386335039
4	2	54	0.6352433706
4	2	55	0.6261328087
4	2	56	0.6209010269
4	2	57	0.6165526639
4	2	58	0.6117237441
4	2	59	0.6068425752
4	2	60	0.6034819166
4	2	61	0.5965096744
4	2	62	0.5940066796
4	2	63	0.5914380371
4	2	64	0.5886499936
4	2	65	0.5874799268
4	2	66	0.5861433262
4	2	67	0.5813543366
4	2	68	0.5747791689
4	2	69	0.5724737529
4	2	70	0.5711761177
4	2	71	0.5701324984
4	2	72	0.5693277415
4	2	73	0.5568283864
4	2	74	0.5519878460
4	2	75	0.5482525630
4	2	76	0.5455746922
4	2	77	0.5371513899
4	2	78	0.5351790868
4	2	79	0.5313580520
4	2	80	0.5283330696
4	2	81	0.5253256670
4	2	82	0.5229513551
4	2	83	0.5205961394
4	2	84	0.5202100447
4	2	85	0.5180517909
4	2	86	0.5151194839
4	2	87	0.5142077874
4	2	88	0.5140751665
4	2	89	0.5138966061
4	2	90	0.5135005785
4	2	91	0.5091747480

4	2	92	0.5082491411		
4	2	93	0.5071006338		
4	2	94	0.5060761145		
4	2	95	0.5041046164		
4	2	96	0.5022838770		
4	2	97	0.5017034805		
4	2	98	0.5015831202		
4	2	99	0.5010215202		
4	2	100	0.5008698794		
*	5	1	3	0.9999999999	1.0000000000 tight bound
*	5	1	4	0.9999999999	1.0000000000 tight bound
*	5	1	5	0.9999999999	1.0000000000 tight bound
*	5	1	6	0.9599999999	0.9600000000 tight bound
	5	1	7	0.9180848294	0.9333333334
	5	1	8	0.8918889086	0.9142857143
	5	1	9	0.8888888888	0.9000000000
*	5	1	10	0.8888888888	0.8888888889 tight bound
	5	1	11	0.8505085833	0.8800000000
	5	1	12	0.8475970508	0.8727272728
	5	1	13	0.8310735125	0.8666666667
	5	1	14	0.8309716701	0.8615384616
	5	1	15	0.8284271247	0.8571428572
*	5	1	16	0.7999999999	0.8000000000 tight bound
	5	1	17	0.7687312456	0.8000000000 Henry Cohn, 2025
	5	1	18	0.7657449677	0.8000000000
	5	1	19	0.7499999999	0.8000000000
	5	1	20	0.7499999999	0.8000000000
	5	1	21	0.7065913748	0.8000000000
	5	1	22	0.6930459625	0.8000000000
	5	1	23	0.6806468838	0.8000000000 Henry Cohn, 2025
	5	1	24	0.6747429559	0.8000000000
	5	1	25	0.6691901151	0.8000000000
	5	1	26	0.6580191687	0.8000000000 Henry Cohn, 2025
	5	1	27	0.6468567046	0.8000000000
	5	1	28	0.6421785148	0.8000000000
	5	1	29	0.6381208631	Henry Cohn, 2024
	5	1	30	0.6341439740	Henry Cohn, 2025
	5	1	31	0.6279257366	
	5	1	32	0.6266920713	
	5	1	33	0.6251305099	
	5	1	34	0.6184811046	
	5	1	35	0.6180339887	
	5	1	36	0.6180339887	
	5	1	37	0.6180339887	
	5	1	38	0.5931996071	Henry Cohn, 2023
	5	1	39	0.5878738637	Henry Cohn, 2024
	5	1	40	0.5799099406	Henry Cohn, 2023
	5	1	41	0.5740768631	
	5	1	42	0.5643156569	Henry Cohn, 2023
	5	1	43	0.5592551525	Henry Cohn, 2024
	5	1	44	0.5539224156	

5	1	45	0.5483442914	Henry Cohn, 2023
5	1	46	0.5414095503	
5	1	47	0.5354411857	Henry Cohn, 2024
5	1	48	0.5298355630	Henry Cohn, 2024
5	1	49	0.5250335140	Henry Cohn, 2024
5	1	50	0.5202588767	Henry Cohn, 2024
5	1	51	0.5142269208	Henry Cohn, 2024
5	1	52	0.5102676921	Henry Cohn, 2024
5	1	53	0.5068372749	Henry Cohn, 2025
5	1	54	0.5034930736	Henry Cohn, 2024
5	1	55	0.4996299524	Henry Cohn, 2025
5	1	56	0.4978085353	Henry Cohn, 2025
5	1	57	0.4956421213	Henry Cohn, 2024
5	1	58	0.4919358685	
5	1	59	0.4895549039	Henry Cohn, 2024
5	1	60	0.4875241920	Henry Cohn, 2025
5	1	61	0.4863699814	Henry Cohn, 2025
5	1	62	0.4812907936	Henry Cohn, 2024
5	1	63	0.4786081822	Henry Cohn, 2024
5	1	64	0.4756326343	Henry Cohn, 2024
5	1	65	0.4734766842	Henry Cohn, 2024
5	1	66	0.4706429650	Henry Cohn, 2024
5	1	67	0.4683085185	
5	1	68	0.4660710287	Henry Cohn, 2024
5	1	69	0.4643123376	Henry Cohn, 2024
5	1	70	0.4628418084	Henry Cohn, 2024
5	1	71	0.4607714717	Henry Cohn, 2024
5	1	72	0.4588928486	Henry Cohn, 2024
5	1	73	0.4571630770	Henry Cohn, 2024
5	1	74	0.4561092407	
5	1	75	0.4548400944	Henry Cohn, 2024
5	1	76	0.4525512368	Henry Cohn, 2024
5	1	77	0.4492901527	
5	1	78	0.4463644226	
5	1	79	0.4448778309	
5	1	80	0.4416523625	
5	1	81	0.4383415948	Henry Cohn, 2024
5	1	82	0.4356162671	
5	1	83	0.4336216395	
5	1	84	0.4310365993	
5	1	85	0.4284713947	Henry Cohn, 2024
5	1	86	0.4263419158	
5	1	87	0.4228189406	
5	1	88	0.4204097656	
5	1	89	0.4172422362	
5	1	90	0.4148622928	
5	1	91	0.4125488092	
5	1	92	0.4099314220	
5	1	93	0.4070101986	
5	1	94	0.4047564145	
5	1	95	0.4021847400	

5	1	96	0.3999875102			
5	1	97	0.3977256548			
5	1	98	0.3957004779			
5	1	99	0.3937862470			
5	1	100	0.3918423693			
5	2	3	1.7499999999	1.8000000000		
*	5	2	4	1.5999999999	1.6000000000 tight bound [4]	
*	5	2	5	1.4999999999	1.5000000000 tight bound [4]	
*	5	2	6	1.4399999999	1.4400000000 tight bound [4]	
*	5	2	7	1.3999999999	1.4000000000 tight bound [4]	
*	5	2	8	1.3714285714	1.3714285715 tight bound [4]	
*	5	2	9	1.3499999999	1.3500000000 tight bound [4]	
*	5	2	10	1.3333333333	1.3333333334 tight bound [4]	
*	5	2	11	1.3199999999	1.3200000000 tight bound [4]	
5	2	12	1.3063520860	1.3090909091		
5	2	13	1.2941906871	1.3000000000		
5	2	14	1.2790114729	1.2923076924		
5	2	15	1.2707462652	1.2857142858		
*	5	2	16	1.1999999999	1.2000000000	
*	5	2	17	1.1999999999	1.2000000000	
5	2	18	1.1908530119	1.2000000000		
5	2	19	1.1761278309	1.2000000000		
5	2	20	1.1619417514	1.2000000000		
5	2	21	1.1542745973	1.2000000000		
5	2	22	1.1419030833	1.2000000000		
5	2	23	1.1332177715	1.2000000000		
5	2	24	1.1251403012	1.2000000000		
5	2	25	1.1178106155	1.2000000000		
5	2	26	1.1113470553	1.2000000000		
5	2	27	1.1044758153	1.2000000000		
5	2	28	1.0989455424	1.2000000000		
5	2	29	1.0936717022			
5	2	30	1.0874780286			
5	2	31	1.0828576060			
5	2	32	1.0768083597			
5	2	33	1.0722129865			
5	2	34	1.0671267695			
5	2	35	1.0640453885			
5	2	36	1.0595901891			
5	2	37	1.0530112658			
5	2	38	1.0462170817			
5	2	39	1.0404669576			
5	2	40	1.0354930698			
5	2	41	1.0302008769			
5	2	42	1.0256304636			
5	2	43	1.0206811105			
5	2	44	1.0160232501			
5	2	45	1.0123028605			
5	2	46	1.0083490289			
5	2	47	1.0041839980			
5	2	48	1.0004897361			

5	2	49	0.9960708015
5	2	50	0.9909795337
5	2	51	0.9859553022
5	2	52	0.9793165685
5	2	53	0.9744234857
5	2	54	0.9691842943
5	2	55	0.9640070895
5	2	56	0.9595523020
5	2	57	0.9552049081
5	2	58	0.9508182269
5	2	59	0.9476497246
5	2	60	0.9433464971
5	2	61	0.9395372634
5	2	62	0.9358126747
5	2	63	0.9325153597
5	2	64	0.9299448338
5	2	65	0.9270049360
5	2	66	0.9242488409
5	2	67	0.9207887560
5	2	68	0.9183969493
5	2	69	0.9159690207
5	2	70	0.9129655235
5	2	71	0.9106042409
5	2	72	0.9085215953
5	2	73	0.9062459577
5	2	74	0.9044783404
5	2	75	0.9019207505
5	2	76	0.9002160140
5	2	77	0.8978108956
5	2	78	0.8952756903
5	2	79	0.8928232175
5	2	80	0.8905750842
5	2	81	0.8885532618
5	2	82	0.8861275165
5	2	83	0.8838574577
5	2	84	0.8817189815
5	2	85	0.8794881243
5	2	86	0.8773447972
5	2	87	0.8749526086
5	2	88	0.8729021574
5	2	89	0.8705823658
5	2	90	0.8683411832
5	2	91	0.8659446234
5	2	92	0.8639959068
5	2	93	0.8615902565
5	2	94	0.8590307301
5	2	95	0.8569011419
5	2	96	0.8546291110
5	2	97	0.8523999461
5	2	98	0.8500886646
5	2	99	0.8481295242

5	2	100	0.8458789916		
*	6	1	3	0.9999999999	1.0000000000 tight bound
*	6	1	4	0.9999999999	1.0000000000 tight bound
*	6	1	5	0.9999999999	1.0000000000 tight bound
*	6	1	6	0.9999999999	1.0000000000 tight bound
*	6	1	7	0.9722222222	0.9722222223 tight bound
	6	1	8	0.9419464180	0.9523809524
	6	1	9	0.9225724578	0.9375000000
	6	1	10	0.9211646096	0.9259259260
	6	1	11	0.8999999999	0.9166666667
	6	1	12	0.8999999999	0.9090909091
	6	1	13	0.8888888888	0.9027777778
	6	1	14	0.8888888888	0.8974358975
	6	1	15	0.8888888888	0.8928571429
*	6	1	16	0.8888888888	0.8888888889 tight bound
	6	1	17	0.8610152062	0.8854166667 Henry Cohn, 2023
	6	1	18	0.8524029546	0.8823529412 Henry Cohn, 2023
	6	1	19	0.8519454666	0.8796296297
	6	1	20	0.8485780899	0.8771929825
	6	1	21	0.8475970508	0.8750000000
*	6	1	22	0.8333333333	0.8333333334 tight bound
	6	1	23	0.8033322387	0.8333333334 Henry Cohn, 2024
	6	1	24	0.8024691358	0.8333333334
	6	1	25	0.7857005372	0.8333333334
	6	1	26	0.7757930287	0.8333333334 Henry Cohn, 2024
	6	1	27	0.7709404199	0.8333333334 Henry Cohn, 2025
	6	1	28	0.7581504237	0.8333333334 Henry Cohn, 2023
	6	1	29	0.7520323607	0.8333333334 Henry Cohn, 2025
	6	1	30	0.7505950831	0.8333333334 Henry Cohn, 2025
	6	1	31	0.7499999999	0.8333333334
	6	1	32	0.7499999999	0.8333333334
	6	1	33	0.7499999999	0.8333333334
	6	1	34	0.7499999999	0.8333333334
	6	1	35	0.7499999999	0.8333333334
	6	1	36	0.7499999999	0.8333333334
	6	1	37	0.7150548581	0.8333333334 Henry Cohn, 2023
	6	1	38	0.7050520410	0.8333333334
	6	1	39	0.7007459519	0.8333333334 Henry Cohn, 2025
	6	1	40	0.6881048262	0.8333333334
	6	1	41	0.6843896155	Henry Cohn, 2024
	6	1	42	0.6810759859	Henry Cohn, 2024
	6	1	43	0.6775225130	
	6	1	44	0.6730735629	
	6	1	45	0.6709820470	Henry Cohn, 2025
	6	1	46	0.6707778161	
	6	1	47	0.6668214796	Henry Cohn, 2025
	6	1	48	0.6643421396	Henry Cohn, 2025
	6	1	49	0.6628431715	Henry Cohn, 2024
	6	1	50	0.6597970822	Henry Cohn, 2024
	6	1	51	0.6573685006	Henry Cohn, 2025
	6	1	52	0.6549928217	Henry Cohn, 2025

6	1	53	0.6518862854		Henry Cohn, 2025	
6	1	54	0.6472993195		Henry Cohn, 2024	
6	1	55	0.6458906248		Henry Cohn, 2024	
6	1	56	0.6445726790		Henry Cohn, 2024	
6	1	57	0.6422717420		Henry Cohn, 2025	
6	1	58	0.6414203744		Henry Cohn, 2024	
6	1	59	0.6408108766			
6	1	60	0.6408108766			
6	1	61	0.6288607578			
6	1	62	0.6259241568		Henry Cohn, 2025	
6	1	63	0.6249999999			
6	1	64	0.6153741569		Henry Cohn, 2024	
6	1	65	0.6105682359			
6	1	66	0.6074060558		Henry Cohn, 2024	
6	1	67	0.6042661694			
6	1	68	0.6007281916		Henry Cohn, 2024	
6	1	69	0.5970054012			
6	1	70	0.5934453317			
6	1	71	0.5902148793			
6	1	72	0.5871179693		Henry Cohn, 2024	
6	1	73	0.5839833402			
6	1	74	0.5815383479		Henry Cohn, 2024	
6	1	75	0.5783753807			
6	1	76	0.5747784532			
6	1	77	0.5717458998			
6	1	78	0.5683706678		Henry Cohn, 2024	
6	1	79	0.5654040319			
6	1	80	0.5626916126			
6	1	81	0.5597843410			
6	1	82	0.5570452954			
6	1	83	0.5542475706			
6	1	84	0.5516596619			
6	1	85	0.5496095748			
6	1	86	0.5466722586			
6	1	87	0.5443435724			
6	1	88	0.5423055738			
6	1	89	0.5410890736			
6	1	90	0.5403777598			
6	1	91	0.5356260482			
6	1	92	0.5334132190			
6	1	93	0.5314755905			
6	1	94	0.5295919736			
6	1	95	0.5280243126			
6	1	96	0.5262807474			
6	1	97	0.5253380392			
6	1	98	0.5246693560			
6	1	99	0.5234407485			
6	1	100	0.5225120511			
*	6	2	3	1.9999999999	2.0000000000	tight bound [4]
*	6	2	4	1.7777777777	1.7777777778	tight bound [4]
*	6	2	5	1.6666666666	1.6666666667	tight bound [4]

* 6	2	6	1.5999999999	1.6000000000	tight bound [4]
* 6	2	7	1.5555555555	1.5555555556	tight bound [4]
* 6	2	8	1.5238095238	1.5238095239	tight bound [4]
* 6	2	9	1.4999999999	1.5000000000	tight bound [5]
* 6	2	10	1.4814814814	1.4814814815	tight bound [4]
* 6	2	11	1.4666666666	1.4666666667	tight bound [4]
* 6	2	12	1.4545454545	1.4545454546	tight bound [4]
* 6	2	13	1.4444444444	1.4444444445	tight bound [4]
* 6	2	14	1.4358974358	1.4358974359	tight bound [4]
6	2	15	1.4285668598	1.4285714286	
6	2	16	1.4210084212	1.4222222223	
6	2	17	1.4127250337	1.4166666667	
6	2	18	1.4047583969	1.4117647059	
6	2	19	1.3948290755	1.4074074075	
6	2	20	1.3887598649	1.4035087720	
6	2	21	1.3821363792	1.4000000000	
* 6	2	22	1.3333333333	1.3333333334	
* 6	2	23	1.3333333333	1.3333333334	
6	2	24	1.3325968962	1.3333333334	
6	2	25	1.3229201727	1.3333333334	
6	2	26	1.3151115938	1.3333333334	
6	2	27	1.3071354482	1.3333333334	
6	2	28	1.2987494813	1.3333333334	
6	2	29	1.2887480533	1.3333333334	
6	2	30	1.2803723341	1.3333333334	
6	2	31	1.2683924399	1.3333333334	
6	2	32	1.2590136697	1.3333333334	
6	2	33	1.2525697988	1.3333333334	
6	2	34	1.2447031126	1.3333333334	
6	2	35	1.2430079033	1.3333333334	
6	2	36	1.2344708713	1.3333333334	
6	2	37	1.2276166051	1.3333333334	
6	2	38	1.2239376175	1.3333333334	
6	2	39	1.2205828463	1.3333333334	
6	2	40	1.2149153244	1.3333333334	
6	2	41	1.2115353844		
6	2	42	1.2079375907		
6	2	43	1.2036740337		
6	2	44	1.2007477223		
6	2	45	1.1970435093		
6	2	46	1.1955236435		
6	2	47	1.1927054640		
6	2	48	1.1907500968		
6	2	49	1.1874860499		
6	2	50	1.1841430338		
6	2	51	1.1816449842		
6	2	52	1.1790350370		
6	2	53	1.1752417288		
6	2	54	1.1726203520		
6	2	55	1.1709677900		
6	2	56	1.1686951904		

6	2	57	1.1669485036			
6	2	58	1.1646036685			
6	2	59	1.1636012015			
6	2	60	1.1605380939			
6	2	61	1.1592565267			
6	2	62	1.1563685263			
6	2	63	1.1534349093			
6	2	64	1.1502193651			
6	2	65	1.1462940857			
6	2	66	1.1440936287			
6	2	67	1.1405648287			
6	2	68	1.1385033505			
6	2	69	1.1353800766			
6	2	70	1.1325487156			
6	2	71	1.1317589395			
6	2	72	1.1307823543			
6	2	73	1.1292234424			
6	2	74	1.1283378031			
6	2	75	1.1269926838			
6	2	76	1.1217945827			
6	2	77	1.1167335916			
6	2	78	1.1128464512			
6	2	79	1.1085974370			
6	2	80	1.1054673384			
6	2	81	1.1023649207			
6	2	82	1.0994449841			
6	2	83	1.0968005857			
6	2	84	1.0948369706			
6	2	85	1.0932604315			
6	2	86	1.0899901239			
6	2	87	1.0877593288			
6	2	88	1.0854576425			
6	2	89	1.0832085511			
6	2	90	1.0813145841			
6	2	91	1.0787028526			
6	2	92	1.0774951976			
6	2	93	1.0749489149			
6	2	94	1.0724303637			
6	2	95	1.0710584338			
6	2	96	1.0681970178			
6	2	97	1.0663204323			
6	2	98	1.0642587442			
6	2	99	1.0623180796			
6	2	100	1.0600574437			
*	6	3	3	2.2499999999	2.2500000000	tight bound [4]
*	6	3	4	1.9999999999	2.0000000000	tight bound [4]
*	6	3	5	1.8749999999	1.8750000000	tight bound [4]
*	6	3	6	1.7999999999	1.8000000000	tight bound [4]
*	6	3	7	1.7499999999	1.7500000000	tight bound [4]
*	6	3	8	1.7142857142	1.7142857143	tight bound [4]
*	6	3	9	1.6874999999	1.6875000000	tight bound [4]

* 6	3	10	1.6666666666	1.6666666667	tight bound [4]
* 6	3	11	1.6499999999	1.6500000000	tight bound [4]
* 6	3	12	1.6363636363	1.6363636364	tight bound [4]
* 6	3	13	1.6249999999	1.6250000000	tight bound [4]
* 6	3	14	1.6153846153	1.6153846154	tight bound [4]
* 6	3	15	1.6071428571	1.6071428572	tight bound [4]
* 6	3	16	1.5999999999	1.6000000000	tight bound [4]
6	3	17	1.5937499963	1.5937500000	unclear whether bound is tight
6	3	18	1.5881502528	1.5882352942	
6	3	19	1.5818405394	1.5833333334	
6	3	20	1.5780693377	1.5789473685	
6	3	21	1.5735218412	1.5750000000	
* 6	3	22	1.4999999999	1.5000000000	
* 6	3	23	1.4999999999	1.5000000000	
* 6	3	24	1.4999999999	1.5000000000	
* 6	3	25	1.4999999999	1.5000000000	
* 6	3	26	1.4999999999	1.5000000000	
* 6	3	27	1.4999999999	1.5000000000	
* 6	3	28	1.4999999999	1.5000000000	
* 6	3	29	1.4999999999	1.5000000000	
* 6	3	30	1.4999999999	1.5000000000	
* 6	3	31	1.4999999999	1.5000000000	
* 6	3	32	1.4999999999	1.5000000000	
* 6	3	33	1.4999999999	1.5000000000	
* 6	3	34	1.4999999999	1.5000000000	
6	3	35	1.4999790749	1.5000000000	
6	3	36	1.4999749561	1.5000000000	
6	3	37	1.4998599873	1.5000000000	
6	3	38	1.4998288205	1.5000000000	
6	3	39	1.4997976429	1.5000000000	
6	3	40	1.4997712615	1.5000000000	
6	3	41	1.4297222744		
6	3	42	1.4231484347		
6	3	43	1.3975595909		
6	3	44	1.3894247196		
6	3	45	1.3772905258		
6	3	46	1.3696725240		
6	3	47	1.3634363253		
6	3	48	1.3578030702		
6	3	49	1.3542944243		
6	3	50	1.3500545862		
6	3	51	1.3459853355		
6	3	52	1.3442326620		
6	3	53	1.3419575414		
6	3	54	1.3399765372		
6	3	55	1.3381181039		
6	3	56	1.3359596171		
6	3	57	1.3338283840		
6	3	58	1.3323120718		
6	3	59	1.3306292939		
6	3	60	1.3288903369		

6	3	61	1.3263929129		
6	3	62	1.3228485128		
6	3	63	1.3195098424		
6	3	64	1.3159623462		
6	3	65	1.3124920897		
6	3	66	1.3099925448		
6	3	67	1.3057536632		
6	3	68	1.3031134007		
6	3	69	1.2997741461		
6	3	70	1.2979919058		
6	3	71	1.2974643049		
6	3	72	1.2941627120		
6	3	73	1.2926475323		
6	3	74	1.2906178794		
6	3	75	1.2883858393		
6	3	76	1.2860607212		
6	3	77	1.2837399706		
6	3	78	1.2820332874		
6	3	79	1.2794045677		
6	3	80	1.2774513927		
6	3	81	1.2750874777		
6	3	82	1.2733119875		
6	3	83	1.2718321581		
6	3	84	1.2699317880		
6	3	85	1.2678980788		
6	3	86	1.2663115061		
6	3	87	1.2645392981		
6	3	88	1.2626284684		
6	3	89	1.2605294603		
6	3	90	1.2587028763		
6	3	91	1.2570913180		
6	3	92	1.2547466351		
6	3	93	1.2514357315		
6	3	94	1.2488921230		
6	3	95	1.2462640722		
6	3	96	1.2433375741		
6	3	97	1.2408008155		
6	3	98	1.2381932424		
6	3	99	1.2357149907		
6	3	100	1.2333650196		
*	7	1	3	0.9999999999	1.0000000000 tight bound
*	7	1	4	0.9999999999	1.0000000000 tight bound
*	7	1	5	0.9999999999	1.0000000000 tight bound
*	7	1	6	0.9999999999	1.0000000000 tight bound
*	7	1	7	0.9999999999	1.0000000000 tight bound
*	7	1	8	0.9795918367	0.9795918368 tight bound
	7	1	9	0.9599999999	0.9642857143
	7	1	10	0.9442719099	0.9523809524
	7	1	11	0.9331689892	0.9428571429
	7	1	12	0.9256198347	0.9350649351
	7	1	13	0.9230769230	0.9285714286

★	7	1	14	0.9230769230	0.9230769231	tight bound
	7	1	15	0.9000282686	0.9183673470	Henry Cohn [2]
	7	1	16	0.8938560428	0.9142857143	Henry Cohn [3]
	7	1	17	0.8897094111	0.9107142858	Henry Cohn, 2023
	7	1	18	0.8891525949	0.9075630253	Henry Cohn, 2024
	7	1	19	0.8888888888	0.9047619048	
	7	1	20	0.8888888888	0.9022556391	
	7	1	21	0.8888888888	0.9000000000	
	7	1	22	0.8888888888	0.8979591837	
	7	1	23	0.8888888888	0.8961038962	
	7	1	24	0.8888888888	0.8944099379	
	7	1	25	0.8888888888	0.8928571429	
	7	1	26	0.8888888888	0.8914285715	
	7	1	27	0.8888888888	0.8901098902	
★	7	1	28	0.8888888888	0.8888888889	tight bound
	7	1	29	0.8445312981	0.8571428572	
	7	1	30	0.8313923657	0.8571428572	Henry Cohn, 2025
	7	1	31	0.8240492092	0.8571428572	Henry Cohn, 2024
	7	1	32	0.8176605309	0.8571428572	Henry Cohn, 2025
	7	1	33	0.8163265306	0.8571428572	
	7	1	34	0.8163265306	0.8571428572	
	7	1	35	0.8163265306	0.8571428572	
	7	1	36	0.8163265306	0.8571428572	
	7	1	37	0.7850659657	0.8571428572	Henry Cohn, 2024
	7	1	38	0.7816698233	0.8571428572	Henry Cohn, 2024
	7	1	39	0.7753229524	0.8571428572	Henry Cohn, 2024
	7	1	40	0.7705692097	0.8571428572	Henry Cohn, 2024
	7	1	41	0.7673681854	0.8571428572	Henry Cohn, 2025
	7	1	42	0.7623626256	0.8571428572	Henry Cohn, 2024
	7	1	43	0.7578083055	0.8571428572	Henry Cohn, 2025
	7	1	44	0.7554575138	0.8571428572	Henry Cohn, 2024
	7	1	45	0.7534439276	0.8571428572	Henry Cohn, 2025
	7	1	46	0.7516851450	0.8571428572	Henry Cohn, 2025
	7	1	47	0.7506663684	0.8571428572	Henry Cohn, 2025
	7	1	48	0.7501932632	0.8571428572	Henry Cohn, 2025
	7	1	49	0.7499999999	0.8571428572	
	7	1	50	0.7499999999	0.8571428572	
	7	1	51	0.7499999999	0.8571428572	
	7	1	52	0.7499999999	0.8571428572	
	7	1	53	0.7499999999	0.8571428572	
	7	1	54	0.7499999999	0.8571428572	
	7	1	55	0.7499999999		
	7	1	56	0.7499999999		
	7	1	57	0.7499999999		
	7	1	58	0.7499999999		
	7	1	59	0.7499999999		
	7	1	60	0.7499999999		
	7	1	61	0.7499999999		
	7	1	62	0.7499999999		
	7	1	63	0.7499999999		
	7	1	64	0.7272727272		

7	1	65	0.7101196278		Henry Cohn, 2024	
7	1	66	0.7092457690		Henry Cohn, 2024	
7	1	67	0.7026520710			
7	1	68	0.6996862692			
7	1	69	0.6976109515			
7	1	70	0.6953607564		Henry Cohn, 2024	
7	1	71	0.6929495862			
7	1	72	0.6922523975		Henry Cohn, 2024	
7	1	73	0.6905244807			
7	1	74	0.6893879402		Henry Cohn, 2024	
7	1	75	0.6884389065			
7	1	76	0.6879253343			
7	1	77	0.6854109241			
7	1	78	0.6848589381		Henry Cohn, 2024	
7	1	79	0.6829044957			
7	1	80	0.6821181597			
7	1	81	0.6818728582			
7	1	82	0.6789136560			
7	1	83	0.6779723038			
7	1	84	0.6761564392			
7	1	85	0.6740741367			
7	1	86	0.6692497584			
7	1	87	0.6690022597			
7	1	88	0.6684937216			
7	1	89	0.6680051825			
7	1	90	0.6677412055			
7	1	91	0.6666666666			
7	1	92	0.6501548456			
7	1	93	0.6481425124			
7	1	94	0.6464885044			
7	1	95	0.6456776808			
7	1	96	0.6427894602			
7	1	97	0.6394031665			
7	1	98	0.6371403693			
7	1	99	0.6351707549			
7	1	100	0.6328046273			
*	7	2	3	1.9999999999	2.0000000000	tight bound
	7	2	4	1.8888888888	1.9047619048	
	7	2	5	1.7853996980	1.7857142858	
*	7	2	6	1.7142857142	1.7142857143	tight bound [4]
*	7	2	7	1.6666666666	1.6666666667	tight bound [4]
*	7	2	8	1.6326530612	1.6326530613	tight bound [4]
*	7	2	9	1.6071428571	1.6071428572	tight bound [4]
*	7	2	10	1.5873015873	1.5873015874	tight bound [4]
*	7	2	11	1.5714285714	1.5714285715	tight bound [4]
*	7	2	12	1.5584415584	1.5584415585	tight bound [4]
*	7	2	13	1.5476190476	1.5476190477	tight bound [4]
*	7	2	14	1.5384615384	1.5384615385	tight bound [4]
*	7	2	15	1.5306122448	1.5306122449	tight bound [4]
*	7	2	16	1.5238095238	1.5238095239	tight bound [4]
*	7	2	17	1.5178571428	1.5178571429	tight bound [4]

7	2	18	1.5126049647	1.5126050421	unclear whether bound is tight
7	2	19	1.5078135777	1.5079365080	
7	2	20	1.5025651961	1.5037593985	
7	2	21	1.4986698794	1.5000000000	
7	2	22	1.4911646318	1.4965986395	
7	2	23	1.4858572869	1.4935064936	
7	2	24	1.4789664832	1.4906832299	
7	2	25	1.4724778886	1.4880952381	
7	2	26	1.4666498991	1.4857142858	
7	2	27	1.4606000326	1.4835164836	
7	2	28	1.4530805455	1.4814814815	
★	7	2	29	1.4285714285	1.4285714286
	7	2	30	1.4234168210	1.4285714286
	7	2	31	1.4167413920	1.4285714286
	7	2	32	1.4106172456	1.4285714286
	7	2	33	1.4038294444	1.4285714286
	7	2	34	1.3978005668	1.4285714286
	7	2	35	1.3915140837	1.4285714286
	7	2	36	1.3846616119	1.4285714286
	7	2	37	1.3787964945	1.4285714286
	7	2	38	1.3723186833	1.4285714286
	7	2	39	1.3666505200	1.4285714286
	7	2	40	1.3605996315	1.4285714286
	7	2	41	1.3574900911	1.4285714286
	7	2	42	1.3550346662	1.4285714286
	7	2	43	1.3449020718	1.4285714286
	7	2	44	1.3407058526	1.4285714286
	7	2	45	1.3356536494	1.4285714286
	7	2	46	1.3321216420	1.4285714286
	7	2	47	1.3267186601	1.4285714286
	7	2	48	1.3231954071	1.4285714286
	7	2	49	1.3209340300	1.4285714286
	7	2	50	1.3150008002	1.4285714286
	7	2	51	1.3111594033	1.4285714286
	7	2	52	1.3072463731	1.4285714286
	7	2	53	1.3039771601	1.4285714286
	7	2	54	1.3005373239	1.4285714286
	7	2	55	1.2977549116	
	7	2	56	1.2951504509	
	7	2	57	1.2908080891	
	7	2	58	1.2877363684	
	7	2	59	1.2848918218	
	7	2	60	1.2816993374	
	7	2	61	1.2787261110	
	7	2	62	1.2762435035	
	7	2	63	1.2741915056	
	7	2	64	1.2709640809	
	7	2	65	1.2686289333	
	7	2	66	1.2661430553	
	7	2	67	1.2639313864	
	7	2	68	1.2613220241	

7	2	69	1.2593780842		
7	2	70	1.2570428981		
7	2	71	1.2550353889		
7	2	72	1.2525900339		
7	2	73	1.2503852344		
7	2	74	1.2481794391		
7	2	75	1.2461449969		
7	2	76	1.2439461645		
7	2	77	1.2424395212		
7	2	78	1.2403264525		
7	2	79	1.2385057683		
7	2	80	1.2368075509		
7	2	81	1.2347641678		
7	2	82	1.2329815570		
7	2	83	1.2312377095		
7	2	84	1.2295558152		
7	2	85	1.2279243483		
7	2	86	1.2263595006		
7	2	87	1.2247949249		
7	2	88	1.2231005224		
7	2	89	1.2218114308		
7	2	90	1.2204226022		
7	2	91	1.2186197730		
7	2	92	1.2170420393		
7	2	93	1.2153674979		
7	2	94	1.2138172699		
7	2	95	1.2121348994		
7	2	96	1.2109491523		
7	2	97	1.2093494870		
7	2	98	1.2079309969		
7	2	99	1.2068681964		
7	2	100	1.2049910656		
7	3	3	2.4999999999	2.5714285715	
*	7	3	4	2.2857142857	2.2857142858 tight bound [4]
*	7	3	5	2.1428571428	2.1428571429 tight bound [4]
*	7	3	6	2.0571428571	2.0571428572 tight bound [4]
*	7	3	7	1.9999999999	2.0000000000 tight bound [4]
*	7	3	8	1.9591836734	1.9591836735 tight bound [4]
*	7	3	9	1.9285714285	1.9285714286 tight bound [4]
*	7	3	10	1.9047619047	1.9047619048 tight bound [4]
*	7	3	11	1.8857142857	1.8857142858 tight bound [4]
*	7	3	12	1.8701298701	1.8701298702 tight bound [4]
*	7	3	13	1.8571428571	1.8571428572 tight bound [4]
*	7	3	14	1.8461538461	1.8461538462 tight bound [4]
*	7	3	15	1.8367346938	1.8367346939 tight bound [4]
*	7	3	16	1.8285714285	1.8285714286 tight bound [4]
*	7	3	17	1.8214285714	1.8214285715 tight bound [4]
*	7	3	18	1.8151260504	1.8151260505 tight bound [4]
*	7	3	19	1.8095238095	1.8095238096 tight bound [4]
*	7	3	20	1.8045112781	1.8045112782 tight bound [4]
*	7	3	21	1.7999999999	1.8000000000 tight bound [4]

★	7	3	22	1.7959183673	1.7959183674	tight bound [4]
	7	3	23	1.7922077630	1.7922077923	unclear whether bound is tight
	7	3	24	1.7885259141	1.7888198758	
	7	3	25	1.7845144676	1.7857142858	
	7	3	26	1.7802988168	1.7828571429	
	7	3	27	1.7777777777	1.7802197803	
★	7	3	28	1.7777777777	1.7777777778	tight bound [5]
★	7	3	29	1.7142857142	1.7142857143	
★	7	3	30	1.7142857142	1.7142857143	
★	7	3	31	1.7142857142	1.7142857143	
	7	3	32	1.7123818065	1.7142857143	
	7	3	33	1.7090579490	1.7142857143	
	7	3	34	1.7045536491	1.7142857143	
	7	3	35	1.6993966165	1.7142857143	
	7	3	36	1.6940796385	1.7142857143	
	7	3	37	1.6853688082	1.7142857143	
	7	3	38	1.6782858851	1.7142857143	
	7	3	39	1.6724829492	1.7142857143	
	7	3	40	1.6671276045	1.7142857143	
	7	3	41	1.6622964593	1.7142857143	
	7	3	42	1.6599721328	1.7142857143	
	7	3	43	1.6530488721	1.7142857143	
	7	3	44	1.6485675628	1.7142857143	
	7	3	45	1.6447847108	1.7142857143	
	7	3	46	1.6401963991	1.7142857143	
	7	3	47	1.6359455404	1.7142857143	
	7	3	48	1.6318722186	1.7142857143	
	7	3	49	1.6286298553	1.7142857143	
	7	3	50	1.6243991404	1.7142857143	
	7	3	51	1.6205530337	1.7142857143	
	7	3	52	1.6166859122	1.7142857143	
	7	3	53	1.6126345779	1.7142857143	
	7	3	54	1.6091095014	1.7142857143	
	7	3	55	1.6053922212		
	7	3	56	1.6018504077		
	7	3	57	1.5988670306		
	7	3	58	1.5951321828		
	7	3	59	1.5916167672		
	7	3	60	1.5891343332		
	7	3	61	1.5858780607		
	7	3	62	1.5822464688		
	7	3	63	1.5792334760		
	7	3	64	1.5766033063		
	7	3	65	1.5739901872		
	7	3	66	1.5704264419		
	7	3	67	1.5672619017		
	7	3	68	1.5643389046		
	7	3	69	1.5613224723		
	7	3	70	1.5584631552		
	7	3	71	1.5555870749		
	7	3	72	1.5524832564		

7	3	73	1.5493477805		
7	3	74	1.5464928374		
7	3	75	1.5445045976		
7	3	76	1.5410845074		
7	3	77	1.5393865819		
7	3	78	1.5358010907		
7	3	79	1.5327161199		
7	3	80	1.5302183992		
7	3	81	1.5277618493		
7	3	82	1.5251803048		
7	3	83	1.5225572939		
7	3	84	1.5199230998		
7	3	85	1.5176187665		
7	3	86	1.5157726523		
7	3	87	1.5132902028		
7	3	88	1.5112045823		
7	3	89	1.5088923199		
7	3	90	1.5067859785		
7	3	91	1.5043159181		
7	3	92	1.5026853705		
7	3	93	1.5003138772		
7	3	94	1.4985597338		
7	3	95	1.4965800606		
7	3	96	1.4947515620		
7	3	97	1.4926248315		
7	3	98	1.4907987931		
7	3	99	1.4891349922		
7	3	100	1.4870328370		
*	8	1 3	0.9999999999	1.0000000000	tight bound
*	8	1 4	0.9999999999	1.0000000000	tight bound
*	8	1 5	0.9999999999	1.0000000000	tight bound
*	8	1 6	0.9999999999	1.0000000000	tight bound
*	8	1 7	0.9999999999	1.0000000000	tight bound
*	8	1 8	0.9999999999	1.0000000000	tight bound
*	8	1 9	0.9843749999	0.9843750000	tight bound
	8	1 10	0.9666046313	0.9722222223	
	8	1 11	0.9558423333	0.9625000000	Henry Cohn [2]
	8	1 12	0.9463324958	0.9545454546	
	8	1 13	0.9428498176	0.9479166667	Henry Cohn [2]
	8	1 14	0.9333173024	0.9423076924	
	8	1 15	0.9271187957	0.9375000000	Henry Cohn [2]
	8	1 16	0.9249505911	0.9333333334	
	8	1 17	0.9158776325	0.9296875000	Henry Cohn, 2023
	8	1 18	0.9120270918	0.9264705883	
	8	1 19	0.9052829527	0.9236111112	
	8	1 20	0.9011031374	0.9210526316	Henry Cohn, 2025
	8	1 21	0.8977598901	0.9187500000	Henry Cohn, 2025
	8	1 22	0.8950594747	0.9166666667	
	8	1 23	0.8915606334	0.9147727273	Henry Cohn, 2025
	8	1 24	0.8897214335	0.9130434783	Henry Cohn, 2025
	8	1 25	0.8891116857	0.9114583334	Henry Cohn, 2025

8	1	26	0.8890483421	0.9100000000	Henry Cohn, 2025
8	1	27	0.8890182115	0.9086538462	Henry Cohn, 2025
8	1	28	0.8889403800	0.9074074075	Henry Cohn, 2025
8	1	29	0.8888917489	0.9062500000	Henry Cohn, 2025
8	1	30	0.8888888900	0.9051724138	Henry Cohn, 2025
8	1	31	0.8888888888	0.9041666667	
8	1	32	0.8888888888	0.9032258065	
8	1	33	0.8752898806	0.9023437500	
8	1	34	0.8735966279	0.9015151516	Henry Cohn, 2023
8	1	35	0.8724489795	0.9007352942	
8	1	36	0.8724489795	0.9000000000	
8	1	37	0.8570251735	0.8750000000	
8	1	38	0.8521149013	0.8750000000	Henry Cohn, 2025
8	1	39	0.8490659200	0.8750000000	
8	1	40	0.8394839273	0.8750000000	Henry Cohn, 2025
8	1	41	0.8336327072	0.8750000000	Henry Cohn, 2025
8	1	42	0.8321803133	0.8750000000	
8	1	43	0.8252343912	0.8750000000	Henry Cohn, 2024
8	1	44	0.8246210354	0.8750000000	
8	1	45	0.8180071672	0.8750000000	Henry Cohn, 2024
8	1	46	0.8133111207	0.8750000000	
8	1	47	0.8099475483	0.8750000000	
8	1	48	0.8062414782	0.8750000000	Henry Cohn, 2024
8	1	49	0.8006991244	0.8750000000	Henry Cohn, 2025
8	1	50	0.7960527511	0.8750000000	Henry Cohn, 2025
8	1	51	0.7915177625	0.8750000000	Henry Cohn, 2025
8	1	52	0.7881086221	0.8750000000	Henry Cohn, 2024
8	1	53	0.7874448256	0.8750000000	
8	1	54	0.7874469378	0.8750000000	Henry Cohn, 2024
8	1	55	0.7782542157	0.8750000000	Henry Cohn, 2024
8	1	56	0.7748346495	0.8750000000	
8	1	57	0.7726005037	0.8750000000	
8	1	58	0.7693598852	0.8750000000	
8	1	59	0.7665796417	0.8750000000	Henry Cohn, 2024
8	1	60	0.7640649266	0.8750000000	
8	1	61	0.7614663919	0.8750000000	
8	1	62	0.7594322065	0.8750000000	
8	1	63	0.7572799338	0.8750000000	
8	1	64	0.7557164720	0.8750000000	
8	1	65	0.7542754622	0.8750000000	
8	1	66	0.7521498262	0.8750000000	
8	1	67	0.7509841150	0.8750000000	
8	1	68	0.7508437043	0.8750000000	
8	1	69	0.7505214729	0.8750000000	
8	1	70	0.7504163618	0.8750000000	
8	1	71	0.7504163618		
8	1	72	0.7501027399		
8	1	73	0.7500605860		
8	1	74	0.7500546207		
8	1	75	0.7500205088		
8	1	76	0.7500001960		

8	1	77	0.7499999999		
8	1	78	0.7499999999		
8	1	79	0.7499999999		
8	1	80	0.7499999999		
8	1	81	0.7499999999		
8	1	82	0.7499999999		
8	1	83	0.7499999999		
8	1	84	0.7499999999		
8	1	85	0.7499999999		
8	1	86	0.7499999999		
8	1	87	0.7499999999		
8	1	88	0.7499999999		
8	1	89	0.7499999999		
8	1	90	0.7499999999		
8	1	91	0.7499999999		
8	1	92	0.7499999999		
8	1	93	0.7499999999		
8	1	94	0.7499999999		
8	1	95	0.7499999999		
8	1	96	0.7499999999		
8	1	97	0.7499999999		
8	1	98	0.7499999999		
8	1	99	0.7499999999		
8	1	100	0.7499999999		
8	1	110	0.7499999999		
8	1	120	0.7499999999		
*	8	2	3	1.9999999999	2.0000000000 tight bound
*	8	2	4	1.9999999999	2.0000000000 tight bound [4]
*	8	2	5	1.8749999999	1.8750000000 tight bound [4]
*	8	2	6	1.7999999999	1.8000000000 tight bound [4]
*	8	2	7	1.7499999999	1.7500000000 tight bound [4]
*	8	2	8	1.7142857142	1.7142857143 tight bound [5]
*	8	2	9	1.6874999999	1.6875000000 tight bound [4]
*	8	2	10	1.6666666666	1.6666666667 tight bound [4]
*	8	2	11	1.6499999999	1.6500000000 tight bound [4]
*	8	2	12	1.6363636363	1.6363636364 tight bound [4]
*	8	2	13	1.6249999999	1.6250000000 tight bound [4]
*	8	2	14	1.6153846153	1.6153846154 tight bound [4]
*	8	2	15	1.6071428571	1.6071428572 tight bound [4]
*	8	2	16	1.5999999999	1.6000000000 tight bound [4]
*	8	2	17	1.5937499999	1.5937500000 tight bound [4]
*	8	2	18	1.5882352941	1.5882352942 tight bound [4]
*	8	2	19	1.5833333333	1.5833333334 tight bound [4]
*	8	2	20	1.5789473684	1.5789473685 tight bound [1]
*	8	2	21	1.5749999999	1.5750000000 tight bound [4]
	8	2	22	1.5714206524	1.5714285715
	8	2	23	1.5679718798	1.5681818182
	8	2	24	1.5638956526	1.5652173914
	8	2	25	1.5594411386	1.5625000000
	8	2	26	1.5556048492	1.5600000000
	8	2	27	1.5555555555	1.5576923077

* 8	2	28	1.5555555555	1.5555555556	tight bound [5]
8	2	29	1.5455014556	1.5535714286	
8	2	30	1.5397623054	1.5517241380	
8	2	31	1.5342474644	1.5500000000	
8	2	32	1.5304211816	1.5483870968	
8	2	33	1.5244179223	1.5468750000	
8	2	34	1.5216400745	1.5454545455	
8	2	35	1.5157682671	1.5441176471	
8	2	36	1.5096992398	1.5428571429	
* 8	2	37	1.4999999999	1.5000000000	tight bound [1]
* 8	2	38	1.4999999999	1.5000000000	tight bound [1]
* 8	2	39	1.4999999999	1.5000000000	tight bound [1]
* 8	2	40	1.4999999999	1.5000000000	tight bound [1]
* 8	2	41	1.4999999999	1.5000000000	
* 8	2	42	1.4999999999	1.5000000000	
* 8	2	43	1.4999999999	1.5000000000	
* 8	2	44	1.4999999999	1.5000000000	
8	2	45	1.4839496628	1.5000000000	
8	2	46	1.4820747225	1.5000000000	
8	2	47	1.4574747629	1.5000000000	
8	2	48	1.4493472456	1.5000000000	
8	2	49	1.4430613703	1.5000000000	
8	2	50	1.4370120052	1.5000000000	
8	2	51	1.4295527808	1.5000000000	
8	2	52	1.4250488712	1.5000000000	
8	2	53	1.4205582396	1.5000000000	
8	2	54	1.4169261433	1.5000000000	
8	2	55	1.4139410635	1.5000000000	
8	2	56	1.4103001046	1.5000000000	
8	2	57	1.4067766082	1.5000000000	
8	2	58	1.4035135119	1.5000000000	
8	2	59	1.4005185580	1.5000000000	
8	2	60	1.3970521508	1.5000000000	
8	2	61	1.3938797321	1.5000000000	
8	2	62	1.3917492871	1.5000000000	
8	2	63	1.3902410899	1.5000000000	
8	2	64	1.3855696923	1.5000000000	
8	2	65	1.3830155332	1.5000000000	
8	2	66	1.3798282875	1.5000000000	
8	2	67	1.3780390030	1.5000000000	
8	2	68	1.3747839937	1.5000000000	
8	2	69	1.3720023674	1.5000000000	
8	2	70	1.3700365322	1.5000000000	
8	2	71	1.3669202189		
8	2	72	1.3648267211		
8	2	73	1.3623325496		
8	2	74	1.3601012069		
8	2	75	1.3580251593		
8	2	76	1.3555540286		
8	2	77	1.3530842002		
8	2	78	1.3510414503		

8	2	79	1.3491322329		
8	2	80	1.3471137141		
8	2	81	1.3449341769		
8	2	82	1.3428427590		
8	2	83	1.3410774953		
8	2	84	1.3390354010		
8	2	85	1.3372699138		
8	2	86	1.3353916412		
8	2	87	1.3334073764		
8	2	88	1.3317243306		
8	2	89	1.3298350519		
8	2	90	1.3282466826		
8	2	91	1.3265256855		
8	2	92	1.3246678207		
8	2	93	1.3229906401		
8	2	94	1.3214178545		
8	2	95	1.3198705486		
8	2	96	1.3182364199		
8	2	97	1.3167432522		
8	2	98	1.3150944772		
8	2	99	1.3135775953		
8	2	100	1.3123160347		
8	3	3	2.7499999999	2.8125000000	
*	8	3	4	2.4999999999	2.5000000000 tight bound [4]
*	8	3	5	2.3437499999	2.3437500000 tight bound [4]
*	8	3	6	2.2499999999	2.2500000000 tight bound [4]
*	8	3	7	2.1874999999	2.1875000000 tight bound [4]
*	8	3	8	2.1428571428	2.1428571429 tight bound [4]
*	8	3	9	2.1093749999	2.1093750000 tight bound [4]
*	8	3	10	2.0833333333	2.0833333334 tight bound [4]
*	8	3	11	2.0624999999	2.0625000000 tight bound [4]
*	8	3	12	2.0454545454	2.0454545455 tight bound [4]
*	8	3	13	2.0312499999	2.0312500000 tight bound [4]
*	8	3	14	2.0192307692	2.0192307693 tight bound [4]
*	8	3	15	2.0089285714	2.0089285715 tight bound [4]
*	8	3	16	1.9999999999	2.0000000000 tight bound [4]
*	8	3	17	1.9921874999	1.9921875000 tight bound [4]
*	8	3	18	1.9852941176	1.9852941177 tight bound [4]
*	8	3	19	1.9791666666	1.9791666667 tight bound [4]
*	8	3	20	1.9736842105	1.9736842106 tight bound [4]
*	8	3	21	1.9687499999	1.9687500000 tight bound [4]
*	8	3	22	1.9642857142	1.9642857143 tight bound [4]
*	8	3	23	1.9602272727	1.9602272728 tight bound [4]
*	8	3	24	1.9565217391	1.9565217392 tight bound [4]
*	8	3	25	1.9531249999	1.9531250000 tight bound [4]
*	8	3	26	1.9499999999	1.9500000000 tight bound [4]
*	8	3	27	1.9471153846	1.9471153847 tight bound [4]
*	8	3	28	1.9444444444	1.9444444445 tight bound [4]
8	3	29	1.9419607487	1.9419642858	
8	3	30	1.9393067306	1.9396551725	
8	3	31	1.9364104091	1.9375000000	

8	3	32	1.9331940793	1.9354838710
8	3	33	1.9302953436	1.9335937500
8	3	34	1.9269015115	1.9318181819
8	3	35	1.9242740105	1.9301470589
8	3	36	1.9215462348	1.9285714286
* 8	3	37	1.8749999999	1.8750000000
* 8	3	38	1.8749999999	1.8750000000
* 8	3	39	1.8749999999	1.8750000000
8	3	40	1.8726311782	1.8750000000
8	3	41	1.8695466764	1.8750000000
8	3	42	1.8672191190	1.8750000000
8	3	43	1.8617025339	1.8750000000
8	3	44	1.8573529204	1.8750000000
8	3	45	1.8523703681	1.8750000000
8	3	46	1.8481658553	1.8750000000
8	3	47	1.8439643508	1.8750000000
8	3	48	1.8389582224	1.8750000000
8	3	49	1.8376213980	1.8750000000
8	3	50	1.8312093923	1.8750000000
8	3	51	1.8275803295	1.8750000000
8	3	52	1.8241292396	1.8750000000
8	3	53	1.8185356544	1.8750000000
8	3	54	1.8144700115	1.8750000000
8	3	55	1.8101807807	1.8750000000
8	3	56	1.8075235832	1.8750000000
8	3	57	1.8033602301	1.8750000000
8	3	58	1.8002016308	1.8750000000
8	3	59	1.7964451724	1.8750000000
8	3	60	1.7935832562	1.8750000000
8	3	61	1.7910813085	1.8750000000
8	3	62	1.7875667870	1.8750000000
8	3	63	1.7850015275	1.8750000000
8	3	64	1.7823409012	1.8750000000
8	3	65	1.7790680369	1.8750000000
8	3	66	1.7762541407	1.8750000000
8	3	67	1.7738706343	1.8750000000
8	3	68	1.7707761794	1.8750000000
8	3	69	1.7684878328	1.8750000000
8	3	70	1.7671559957	1.8750000000
8	3	71	1.7628283567	
8	3	72	1.7602025129	
8	3	73	1.7582301602	
8	3	74	1.7554788480	
8	3	75	1.7533820090	
8	3	76	1.7509328315	
8	3	77	1.7499651223	
8	3	78	1.7456354580	
8	3	79	1.7439917163	
8	3	80	1.7414874399	
8	3	81	1.7391374780	
8	3	82	1.7372080072	

8	3	83	1.7350507124		
8	3	84	1.7340896616		
8	3	85	1.7306136825		
8	3	86	1.7282004008		
8	3	87	1.7264150137		
8	3	88	1.7238915044		
8	3	89	1.7220491958		
8	3	90	1.7197432344		
8	3	91	1.7183757672		
8	3	92	1.7156619328		
8	3	93	1.7136166168		
8	3	94	1.7114385813		
8	3	95	1.7099987261		
8	3	96	1.7074738729		
8	3	97	1.7055539271		
8	3	98	1.7036747377		
8	3	99	1.7017539456		
8	3	100	1.6995717891		
*	8	4	7	2.3333333333	2.3333333334 tight bound [4]
*	8	4	8	2.2857142857	2.2857142858 tight bound [4]
*	8	4	9	2.2499999999	2.2500000000 tight bound [4]
*	8	4	10	2.2222222222	2.2222222223 tight bound [4]
*	8	4	12	2.1818181818	2.1818181819 tight bound [4]
*	8	4	14	2.1538461538	2.1538461539 tight bound [4]
*	8	4	15	2.1428571428	2.1428571429 tight bound [4]
*	8	4	16	2.1333333333	2.1333333334 tight bound [4]
*	8	4	17	2.1249999999	2.1250000000 tight bound [4]
*	8	4	18	2.1176470588	2.1176470589 tight bound [4]
*	8	4	21	2.0999999999	2.1000000000 tight bound [4]
*	8	4	22	2.0952380952	2.0952380953 tight bound [4]
*	8	4	24	2.0869565217	2.0869565218 tight bound [4]
*	8	4	25	2.0833333333	2.0833333334 tight bound [4]
*	8	4	26	2.0799999999	2.0800000000 tight bound [4]
*	8	4	28	2.0740740740	2.0740740741 tight bound [4]
*	8	4	29	2.0714285714	2.0714285715 tight bound [4]
*	8	4	30	2.0689655172	2.0689655173 tight bound [4]
	8	4	31	2.0666645769	2.0666666667
	8	4	32	2.0639741004	2.0645161291
	8	4	33	2.0608076723	2.0625000000
	8	4	34	2.0577850550	2.0606060607
	8	4	35	2.054845926	2.0588235295
	8	4	36	2.0537386119	2.0571428572
*	8	4	37	2.0000000000	2.0000000000 tight bound [5]
*	8	4	40	2.0000000000	2.0000000000 tight bound [5]
*	8	4	41	2.0000000000	2.0000000000 tight bound [5]
*	8	4	42	2.0000000000	2.0000000000 tight bound [5]
*	8	4	43	2.0000000000	2.0000000000 tight bound [5]
*	8	4	48	2.0000000000	2.0000000000 tight bound [5]
*	8	4	51	2.0000000000	2.0000000000 tight bound [5]
*	8	4	52	2.0000000000	2.0000000000 tight bound [5]
*	8	4	53	2.0000000000	2.0000000000 tight bound [5]

* 8	4	54	2.0000000000	2.0000000000	tight bound [5]
* 8	4	55	2.0000000000	2.0000000000	tight bound [5]
* 8	4	56	2.0000000000	2.0000000000	tight bound [5]
* 8	4	57	2.0000000000	2.0000000000	tight bound [5]
* 8	4	58	2.0000000000	2.0000000000	tight bound [5]
* 8	4	59	2.0000000000	2.0000000000	tight bound [5]
* 8	4	60	2.0000000000	2.0000000000	tight bound [5]
* 8	4	61	2.0000000000	2.0000000000	tight bound [5]
* 8	4	62	2.0000000000	2.0000000000	tight bound [5]
* 8	4	63	2.0000000000	2.0000000000	tight bound [5]
* 8	4	64	2.0000000000	2.0000000000	tight bound [5]
* 8	4	65	2.0000000000	2.0000000000	tight bound [5]
* 8	4	66	2.0000000000	2.0000000000	tight bound [5]
* 8	4	67	2.0000000000	2.0000000000	tight bound [5]
* 8	4	68	2.0000000000	2.0000000000	tight bound [5]
* 8	4	69	2.0000000000	2.0000000000	tight bound [5]
* 8	4	70	2.0000000000	2.0000000000	tight bound [5]
8	4	71	1.9433029277		
8	4	72	1.9400233117		
8	4	73	1.9170010845		
8	4	74	1.9129187037		
8	4	75	1.8989251363		
8	4	76	1.8946920214		
8	4	77	1.8859485889		
8	4	78	1.8814156932		
8	4	79	1.8750405183		
8	4	80	1.8709569658		
8	4	81	1.8662955667		
8	4	82	1.8625465870		
8	4	83	1.8589471846		
8	4	84	1.8569358472		
8	4	85	1.8527867380		
8	4	86	1.8499817093		
8	4	87	1.8472734989		
8	4	88	1.8443317622		
8	4	89	1.8417887120		
8	4	90	1.8396810530		
8	4	91	1.8395554785		
8	4	92	1.8351483298		
8	4	93	1.8334809404		
8	4	94	1.8310471183		
8	4	95	1.8297475483		
8	4	96	1.8275481590		
8	4	97	1.8258608290		
8	4	98	1.8241569036		
8	4	99	1.8219411153		
8	4	100	1.8195715222		
* 9	1	3	0.9999999999	1.0000000000	tight bound
* 9	1	4	0.9999999999	1.0000000000	tight bound
* 9	1	5	0.9999999999	1.0000000000	tight bound
* 9	1	6	0.9999999999	1.0000000000	tight bound

* 9	1	7	0.9999999999	1.0000000000	tight bound
* 9	1	8	0.9999999999	1.0000000000	tight bound
* 9	1	9	0.9999999999	1.0000000000	tight bound
* 9	1	10	0.9876543209	0.9876543210	tight bound
9	1	11	0.9734393342	0.9777777778	
9	1	12	0.9666046313	0.9696969697	
9	1	13	0.9563707159	0.9629629630	Henry Cohn [2]
9	1	14	0.9512036178	0.9572649573	
9	1	15	0.9455684462	0.9523809524	Henry Cohn [2]
9	1	16	0.9411764705	0.9481481482	
9	1	17	0.9411764705	0.9444444445	
* 9	1	18	0.9411764705	0.9411764706	tight bound
9	1	19	0.9283489889	0.9382716050	Henry Cohn, 2025
9	1	20	0.9261177246	0.9356725147	
9	1	21	0.9217122601	0.9333333334	
9	1	22	0.9163582686	0.9312169313	
9	1	23	0.9120511821	0.9292929293	
9	1	24	0.9111188873	0.9275362319	
9	1	25	0.9076889007	0.9259259260	
9	1	26	0.9064850358	0.9244444445	Henry Cohn, 2025
9	1	27	0.9010440904	0.9230769231	Henry Cohn, 2024
9	1	28	0.9001504304	0.9218106996	
9	1	29	0.8995011921	0.9206349207	
9	1	30	0.8995011921	0.9195402299	
9	1	31	0.8923971992	0.9185185186	Henry Cohn, 2025
9	1	32	0.8912357215	0.9175627241	Henry Cohn, 2024
9	1	33	0.8907154439	0.9166666667	Henry Cohn, 2025
9	1	34	0.8902294979	0.9158249159	Henry Cohn, 2025
9	1	35	0.8900381448	0.9150326798	Henry Cohn, 2024
9	1	36	0.8895205541	0.9142857143	Henry Cohn, 2025
9	1	37	0.8893353783	0.9135802470	Henry Cohn, 2024
9	1	38	0.8891997707	0.9129129130	Henry Cohn, 2024
9	1	39	0.8891005773	0.9122807018	Henry Cohn, 2023
9	1	40	0.8888888888	0.9116809117	
9	1	41	0.8888888888	0.9111111112	
9	1	42	0.8888888888	0.9105691057	
9	1	43	0.8888888888	0.9100529101	
9	1	44	0.8888888888	0.9095607236	
9	1	45	0.8888888888	0.9090909091	
* 9	1	46	0.8888888888	0.8888888889	tight bound
* 9	1	47	0.8888888888	0.8888888889	tight bound
* 9	1	48	0.8888888888	0.8888888889	tight bound
9	1	49	0.8603426108	0.8888888889	Henry Cohn, 2025
9	1	50	0.8565348344	0.8888888889	Henry Cohn, 2024
9	1	51	0.8474254505	0.8888888889	
9	1	52	0.8448475070	0.8888888889	
9	1	53	0.8414466076	0.8888888889	
9	1	54	0.8389983203	0.8888888889	
9	1	55	0.8339800666	0.8888888889	
9	1	56	0.8299733389	0.8888888889	Henry Cohn, 2025
9	1	57	0.8265301532	0.8888888889	

9	1	58	0.8245101220	0.8888888889	
9	1	59	0.8211964302	0.8888888889	
9	1	60	0.8188657535	0.8888888889	
9	1	61	0.8156219469	0.8888888889	
9	1	62	0.8131485938	0.8888888889	
9	1	63	0.8101339005	0.8888888889	
9	1	64	0.8077509620	0.8888888889	
9	1	65	0.8049939458	0.8888888889	
9	1	66	0.8020688238	0.8888888889	
9	1	67	0.7996575222	0.8888888889	
9	1	68	0.7971631370	0.8888888889	
9	1	69	0.7942599128	0.8888888889	
9	1	70	0.7923016940	0.8888888889	
9	1	71	0.7897734473	0.8888888889	
9	1	72	0.7876276159	0.8888888889	
9	1	73	0.7852787663	0.8888888889	
9	1	74	0.7831714927	0.8888888889	
9	1	75	0.7811886697	0.8888888889	
9	1	76	0.7793323357	0.8888888889	
9	1	77	0.7769543627	0.8888888889	
9	1	78	0.7752313552	0.8888888889	
9	1	79	0.7734929304	0.8888888889	
9	1	80	0.7718407051	0.8888888889	
9	1	81	0.7702618281	0.8888888889	
9	1	82	0.7683614943	0.8888888889	
9	1	83	0.7668828817	0.8888888889	
9	1	84	0.7650876664	0.8888888889	
9	1	85	0.7633192720	0.8888888889	
9	1	86	0.7625818132	0.8888888889	
9	1	87	0.7607612858	0.8888888889	
9	1	88	0.7590444251	0.8888888889	
9	1	89	0.7578723853		
9	1	90	0.7561756538		
9	1	91	0.7553129850		
9	1	92	0.7540368321		
9	1	93	0.7532285242		
9	1	94	0.7511539729		
9	1	95	0.7510180315		
9	1	96	0.7507511058		
9	1	97	0.7503713808		
9	1	98	0.7503713808		
9	1	99	0.7503713808		
9	1	100	0.7503713808		
*	9	2	3	1.9999999999	2.0000000000 tight bound
*	9	2	4	1.9999999999	2.0000000000 tight bound
	9	2	5	1.9374999999	1.9444444445
*	9	2	6	1.8666666666	1.8666666667
*	9	2	7	1.8148148148	1.8148148149
*	9	2	8	1.7777777777	1.7777777778
*	9	2	9	1.7499999999	1.7500000000
*	9	2	10	1.7283950617	1.7283950618

* 9	2	11	1.7111111111	1.7111111112
* 9	2	12	1.6969696969	1.6969696970
* 9	2	13	1.6851851851	1.6851851852
* 9	2	14	1.6752136752	1.6752136753
* 9	2	15	1.6666666666	1.6666666667
* 9	2	16	1.6592592592	1.6592592593
* 9	2	17	1.6527777777	1.6527777778
* 9	2	18	1.6470588235	1.6470588236
* 9	2	19	1.6419753086	1.6419753087
* 9	2	20	1.6374269005	1.6374269006
* 9	2	21	1.6333333333	1.6333333334
* 9	2	22	1.6296296296	1.6296296297
* 9	2	23	1.6262626262	1.6262626263
* 9	2	24	1.6231884057	1.6231884058
9	2	25	1.6203699489	1.6203703704
9	2	26	1.6177255610	1.6177777778
9	2	27	1.6153819649	1.6153846154
9	2	28	1.6118366588	1.6131687243
9	2	29	1.6082669755	1.6111111112
9	2	30	1.6048835870	1.6091954023
9	2	31	1.6011163926	1.6074074075
9	2	32	1.5977899577	1.6057347671
9	2	33	1.5935274222	1.6041666667
9	2	34	1.5911040659	1.6026936027
9	2	35	1.5892944715	1.6013071896
9	2	36	1.5885376440	1.6000000000
9	2	37	1.5815973868	1.5987654321
9	2	38	1.5768416943	1.5975975976
9	2	39	1.5729713339	1.5964912281
9	2	40	1.5697254467	1.5954415955
9	2	41	1.5664722480	1.5944444445
9	2	42	1.5639384346	1.5934959350
9	2	43	1.5615970638	1.5925925926
9	2	44	1.5587900803	1.5917312662
9	2	45	1.5569956637	1.5909090910
9	2	46	1.5484749960	1.5555555556
9	2	47	1.5412989077	1.5555555556
9	2	48	1.5353118322	1.5555555556
9	2	49	1.5304977746	1.5555555556
9	2	50	1.5258308162	1.5555555556
9	2	51	1.5206497331	1.5555555556
9	2	52	1.5164710013	1.5555555556
9	2	53	1.5131295727	1.5555555556
9	2	54	1.5105181411	1.5555555556
9	2	55	1.5067144215	1.5555555556
9	2	56	1.5037005939	1.5555555556
9	2	57	1.4999780657	1.5555555556
9	2	58	1.4968868489	1.5555555556
9	2	59	1.4936256041	1.5555555556
9	2	60	1.4909153761	1.5555555556
9	2	61	1.4875648570	1.5555555556

9	2	62	1.4850871226	1.5555555556		
9	2	63	1.4821140690	1.5555555556		
9	2	64	1.4792446925	1.5555555556		
9	2	65	1.4766507050	1.5555555556		
9	2	66	1.4740711478	1.5555555556		
9	2	67	1.4716929417	1.5555555556		
9	2	68	1.4685202501	1.5555555556		
9	2	69	1.4659600414	1.5555555556		
9	2	70	1.4637968014	1.5555555556		
9	2	71	1.4611697031	1.5555555556		
9	2	72	1.4600879581	1.5555555556		
9	2	73	1.4566522535	1.5555555556		
9	2	74	1.4542258648	1.5555555556		
9	2	75	1.4521441992	1.5555555556		
9	2	76	1.4496867965	1.5555555556		
9	2	77	1.4474868301	1.5555555556		
9	2	78	1.4456031808	1.5555555556		
9	2	79	1.4435490050	1.5555555556		
9	2	80	1.4414773944	1.5555555556		
9	2	81	1.4390785389	1.5555555556		
9	2	82	1.4373773045	1.5555555556		
9	2	83	1.4353263127	1.5555555556		
9	2	84	1.4333863684	1.5555555556		
9	2	85	1.4312604068	1.5555555556		
9	2	86	1.4291855679	1.5555555556		
9	2	87	1.4274275860	1.5555555556		
9	2	88	1.4257349588	1.5555555556		
9	2	89	1.4238650794			
9	2	90	1.4220800143			
9	2	91	1.4203214018			
9	2	92	1.4187042418			
9	2	93	1.4166937540			
9	2	94	1.4151096472			
9	2	95	1.4133764335			
9	2	96	1.4117408691			
9	2	97	1.4101931504			
9	2	98	1.4084149672			
9	2	99	1.4072462533			
9	2	100	1.4051137347			
*	9	3	3	2.9999999999	3.0000000000	tight bound
*	9	3	4	2.6666666666	2.6666666667	
*	9	3	5	2.4999999999	2.5000000000	
*	9	3	6	2.3999999999	2.4000000000	
*	9	3	7	2.3333333333	2.3333333334	
*	9	3	8	2.2857142857	2.2857142858	
*	9	3	9	2.2499999999	2.2500000000	
*	9	3	10	2.2222222222	2.2222222223	
*	9	3	11	2.1999999999	2.2000000000	
*	9	3	12	2.1818181818	2.1818181819	
*	9	3	13	2.1666666666	2.1666666667	
*	9	3	14	2.1538461538	2.1538461539	

* 9 3 15	2.1428571428	2.1428571429
* 9 3 16	2.1333333333	2.1333333334
* 9 3 17	2.1249999999	2.1250000000
* 9 3 18	2.1176470588	2.1176470589
* 9 3 19	2.1111111111	2.1111111112
* 9 3 20	2.1052631578	2.1052631579
* 9 3 21	2.0999999999	2.1000000000
* 9 3 22	2.0952380952	2.0952380953
* 9 3 23	2.0909090909	2.0909090910
* 9 3 24	2.0869565217	2.0869565218
* 9 3 25	2.0833333333	2.0833333334
* 9 3 26	2.0799999999	2.0800000000
* 9 3 27	2.0769230769	2.0769230770
* 9 3 28	2.0740740740	2.0740740741
* 9 3 29	2.0714285714	2.0714285715
* 9 3 30	2.0689655172	2.0689655173
* 9 3 31	2.0666666666	2.0666666667
* 9 3 32	2.0645161290	2.0645161291
* 9 3 33	2.0624999999	2.0625000000
* 9 3 34	2.0606060606	2.0606060607
9 3 35	2.0587809882	2.0588235295
9 3 36	2.0570954026	2.0571428572
9 3 37	2.0544029639	2.0555555556
9 3 38	2.0519649279	2.0540540541
9 3 39	2.0494456271	2.0526315790
9 3 40	2.0469243110	2.0512820513
9 3 41	2.0442185819	2.0500000000
9 3 42	2.0418779229	2.0487804879
9 3 43	2.0387148191	2.0476190477
9 3 44	2.0360672335	2.0465116280
9 3 45	2.0338627125	2.0454545455
* 9 3 46	1.9999999999	2.0000000000
* 9 3 47	1.9999999999	2.0000000000
* 9 3 48	1.9999999999	2.0000000000
* 9 3 49	1.9999999999	2.0000000000
* 9 3 50	1.9999999999	2.0000000000
* 9 3 51	1.9999999999	2.0000000000
9 3 52	1.9984293284	2.0000000000
9 3 53	1.9950018974	2.0000000000
9 3 54	1.9931008689	2.0000000000
9 3 55	1.9898017394	2.0000000000
9 3 56	1.9873031741	2.0000000000
9 3 57	1.9836029246	2.0000000000
9 3 58	1.9817423720	2.0000000000
9 3 59	1.9785568766	2.0000000000
9 3 60	1.9762907171	2.0000000000
9 3 61	1.9738963208	2.0000000000
9 3 62	1.9725766269	2.0000000000
9 3 63	1.9695351554	2.0000000000
9 3 64	1.9678642523	2.0000000000
9 3 65	1.9654932026	2.0000000000

9	3	66	1.9642618203	2.0000000000
9	3	67	1.9489822954	2.0000000000
9	3	68	1.9424076979	2.0000000000
9	3	69	1.9351112904	2.0000000000
9	3	70	1.9309759442	2.0000000000
9	3	71	1.9275473036	2.0000000000
9	3	72	1.9240710698	2.0000000000
9	3	73	1.9208990561	2.0000000000
9	3	74	1.9180931895	2.0000000000
9	3	75	1.9150736484	2.0000000000
9	3	76	1.9125739602	2.0000000000
9	3	77	1.9107035475	2.0000000000
9	3	78	1.9081499003	2.0000000000
9	3	79	1.9062226986	2.0000000000
9	3	80	1.9041204990	2.0000000000
9	3	81	1.9015683663	2.0000000000
9	3	82	1.8996278885	2.0000000000
9	3	83	1.8977358798	2.0000000000
9	3	84	1.8951541982	2.0000000000
9	3	85	1.8930631321	2.0000000000
9	3	86	1.8910014140	2.0000000000
9	3	87	1.8894551350	2.0000000000
9	3	88	1.8880586219	2.0000000000
9	3	89	1.8853134879	
9	3	90	1.8835436182	
9	3	91	1.8817249589	
9	3	92	1.8795075903	
9	3	93	1.8776970877	
9	3	94	1.8758713477	
9	3	95	1.8745919667	
9	3	96	1.8726064384	
9	3	97	1.8709070056	
9	3	98	1.8686909611	
9	3	99	1.8667703641	
9	3	100	1.8654002384	
9	4	45	2.2702890237	2.2727272728
*	9	4	46	2.2222222222 2.2222222223
*	9	4	49	2.2222222222 2.2222222223
9	4	50	2.2199000776	2.2222222223
9	4	51	2.2191449223	2.2222222223
9	4	52	2.2165873022	2.2222222223
9	4	53	2.2149833364	2.2222222223
9	4	54	2.2112042717	2.2222222223
9	4	55	2.2093119084	2.2222222223
9	4	56	2.2053172071	2.2222222223
9	4	57	2.2024293207	2.2222222223
9	4	58	2.1979713031	2.2222222223
9	4	59	2.1951384177	2.2222222223
9	4	60	2.1904527705	2.2222222223
9	4	61	2.1871421708	2.2222222223
9	4	62	2.1834062961	2.2222222223

9	4	63	2.1805350811	2.222222223	
9	4	64	2.1774821057	2.222222223	
9	4	65	2.1749841002	2.222222223	
9	4	66	2.1724998803	2.222222223	
9	4	67	2.1696099947	2.222222223	
9	4	68	2.1666547763	2.222222223	
9	4	69	2.1644442256	2.222222223	
9	4	70	2.1619476026	2.222222223	
9	4	71	2.1592223048	2.222222223	
9	4	72	2.1563486436	2.222222223	
9	4	73	2.1539972410	2.222222223	
9	4	74	2.1512151042	2.222222223	
9	4	75	2.1489487984	2.222222223	
9	4	76	2.1464362472	2.222222223	
9	4	77	2.1441764769	2.222222223	
9	4	78	2.1416475895	2.222222223	
9	4	79	2.1393028788	2.222222223	
9	4	80	2.1369777169	2.222222223	
9	4	81	2.1344900175	2.222222223	
9	4	82	2.1325548006	2.222222223	
9	4	83	2.1297210469	2.222222223	
9	4	84	2.1271362623	2.222222223	
9	4	85	2.1247697592	2.222222223	
9	4	86	2.1226572034	2.222222223	
9	4	87	2.1198837716	2.222222223	
9	4	88	2.1173084588	2.222222223	
9	4	89	2.1150636700		
9	4	90	2.1126150409		
9	4	91	2.1104506860		
9	4	92	2.1082430404		
9	4	93	2.1056386736		
9	4	94	2.1032219634		
9	4	95	2.1005255671		
9	4	96	2.0986926180		
9	4	97	2.0966694728		
9	4	98	2.0941543367		
9	4	99	2.0916262173		
9	4	100	2.0900965624		
*	10	1	3	0.9999999999	1.0000000000 tight bound
*	10	1	4	0.9999999999	1.0000000000 tight bound
*	10	1	5	0.9999999999	1.0000000000 tight bound
*	10	1	6	0.9999999999	1.0000000000 tight bound
*	10	1	7	0.9999999999	1.0000000000 tight bound
*	10	1	8	0.9999999999	1.0000000000 tight bound
*	10	1	9	0.9999999999	1.0000000000 tight bound
*	10	1	10	0.9999999999	1.0000000000 tight bound
*	10	1	11	0.9899999999	0.9900000000 tight bound
	10	1	12	0.9795918367	0.9818181819
	10	1	13	0.9701610293	0.9750000000
	10	1	14	0.9636927022	0.9692307693 Henry Cohn [2]
	10	1	15	0.9620836879	0.9642857143

★	10	1	16	0.9599999999	0.9600000000	tight bound
	10	1	17	0.9507194976	0.9562500000	
	10	1	18	0.9498198614	0.9529411765	
	10	1	19	0.9444444444	0.9500000000	
	10	1	20	0.9444444444	0.9473684211	
	10	1	21	0.9360119154	0.9450000000	Henry Cohn, 2025
	10	1	22	0.9347733958	0.9428571429	Henry Cohn, 2025
	10	1	23	0.9313366956	0.9409090910	Henry Cohn, 2024
	10	1	24	0.9310333458	0.9391304348	Henry Cohn, 2025
	10	1	25	0.9300502194	0.9375000000	
	10	1	26	0.9297012650	0.9360000000	Henry Cohn, 2025
	10	1	27	0.9242201266	0.9346153847	Henry Cohn, 2025
	10	1	28	0.9194378816	0.9333333334	Henry Cohn, 2025
	10	1	29	0.9172571846	0.9321428572	
	10	1	30	0.9132057633	0.9310344828	Henry Cohn, 2025
	10	1	31	0.9113368360	0.9300000000	
	10	1	32	0.9109456444	0.9290322581	
	10	1	33	0.9093855333	0.9281250000	Henry Cohn, 2024
	10	1	34	0.9093191976	0.9272727273	
	10	1	35	0.9092937388	0.9264705883	
	10	1	36	0.9053254437	0.9257142858	
	10	1	37	0.9053254437	0.9250000000	
	10	1	38	0.9053254437	0.9243243244	
	10	1	39	0.9053254437	0.9236842106	
	10	1	40	0.9053254437	0.9230769231	
	10	1	41	0.8957145195	0.9225000000	Henry Cohn, 2025
	10	1	42	0.8939495669	0.9219512196	Henry Cohn, 2025
	10	1	43	0.8927938263	0.9214285715	Henry Cohn, 2025
	10	1	44	0.8920028799	0.9209302326	Henry Cohn, 2024
	10	1	45	0.8913396196	0.9204545455	Henry Cohn, 2024
	10	1	46	0.8908361510	0.9200000000	Henry Cohn, 2024
	10	1	47	0.8904450865	0.9195652174	
	10	1	48	0.8899119241	0.9191489362	Henry Cohn, 2024
	10	1	49	0.8897254046	0.9187500000	
	10	1	50	0.8892491841	0.9183673470	
	10	1	51	0.8888889116	0.9180000000	
	10	1	52	0.8888888891	0.9176470589	
	10	1	53	0.8888888888	0.9173076924	
	10	1	54	0.8888888888	0.9169811321	
	10	1	55	0.8828740780	0.9166666667	
	10	1	56	0.8791307488	0.9000000000	
	10	1	57	0.8759516737	0.9000000000	
	10	1	58	0.8734902536	0.9000000000	
	10	1	59	0.8671082052	0.9000000000	
	10	1	60	0.8656621045	0.9000000000	
	10	1	61	0.8648361193	0.9000000000	Henry Cohn, 2024
	10	1	62	0.8615179785	0.9000000000	
	10	1	63	0.8615179785	0.9000000000	
	10	1	64	0.8615267654	0.9000000000	Henry Cohn, 2024
	10	1	65	0.8615179785	0.9000000000	
	10	1	66	0.8518325826	0.9000000000	

10	1	67	0.8465264471	0.9000000000		
10	1	68	0.8439094495	0.9000000000		
10	1	69	0.8402881286	0.9000000000		
10	1	70	0.8377590617	0.9000000000		
10	1	71	0.8356809302	0.9000000000		
10	1	72	0.8333872517	0.9000000000		
10	1	73	0.8312368159	0.9000000000		
10	1	74	0.8291032400	0.9000000000		
10	1	75	0.8272035407	0.9000000000		
10	1	76	0.8252346390	0.9000000000		
10	1	77	0.8233137114	0.9000000000		
10	1	78	0.8212797061	0.9000000000		
10	1	79	0.8194446490	0.9000000000		
10	1	80	0.8174896636	0.9000000000		
10	1	81	0.8156633388	0.9000000000		
10	1	82	0.8140735185	0.9000000000		
10	1	83	0.8119735528	0.9000000000		
10	1	84	0.8101076725	0.9000000000		
10	1	85	0.8081885001	0.9000000000		
10	1	86	0.8068789347	0.9000000000		
10	1	87	0.8047338178	0.9000000000		
10	1	88	0.8031578077	0.9000000000		
10	1	89	0.8012902268	0.9000000000		
10	1	90	0.7996622387	0.9000000000		
10	1	91	0.7978732500	0.9000000000		
10	1	92	0.7962471644	0.9000000000		
10	1	93	0.7947808729	0.9000000000		
10	1	94	0.7932622387	0.9000000000		
10	1	95	0.7916865927	0.9000000000		
10	1	96	0.7902908007	0.9000000000		
10	1	97	0.7889776287	0.9000000000		
10	1	98	0.7873628662	0.9000000000		
10	1	99	0.7860156893	0.9000000000		
10	1	100	0.7846677264	0.9000000000		
*	10	2	3	1.9999999999	2.0000000000	tight bound
*	10	2	4	1.9999999999	2.0000000000	tight bound
*	10	2	5	1.9999999999	2.0000000000	tight bound
*	10	2	6	1.9199999999	1.9200000000	
*	10	2	7	1.8666666666	1.8666666667	
*	10	2	8	1.8285714285	1.8285714286	
*	10	2	9	1.7999999999	1.8000000000	
*	10	2	10	1.7777777777	1.7777777778	
*	10	2	11	1.7599999999	1.7600000000	
*	10	2	12	1.7454545454	1.7454545455	
*	10	2	13	1.7333333333	1.7333333334	
*	10	2	14	1.7230769230	1.7230769231	
*	10	2	15	1.7142857142	1.7142857143	
*	10	2	16	1.7066666666	1.7066666667	
*	10	2	17	1.6999999999	1.7000000000	
*	10	2	18	1.6941176470	1.6941176471	
*	10	2	19	1.6888888888	1.6888888889	

* 10	2	20	1.6842105263	1.6842105264	
* 10	2	21	1.6799999999	1.6800000000	
* 10	2	22	1.6761904761	1.6761904762	
* 10	2	23	1.6727272727	1.6727272728	
* 10	2	24	1.6695652173	1.6695652174	
* 10	2	25	1.6666666666	1.6666666667	
* 10	2	26	1.6639999999	1.6640000000	
* 10	2	27	1.6615384615	1.6615384616	
10	2	28	1.6592592579	1.6592592593	unclear whether bound is tight
10	2	29	1.6571340790	1.6571428572	
10	2	30	1.6551615886	1.6551724138	
10	2	31	1.6526911663	1.6533333334	
10	2	32	1.6501214922	1.6516129033	
10	2	33	1.6476071575	1.6500000000	
10	2	34	1.6448230004	1.6484848485	
10	2	35	1.6431402003	1.6470588236	
10	2	36	1.6414125736	1.6457142858	
10	2	37	1.6363604829	1.6444444445	
10	2	38	1.6333875451	1.6432432433	
10	2	39	1.6305059352	1.6421052632	
10	2	40	1.6289427497	1.6410256411	
10	2	41	1.6241829838	1.6400000000	
10	2	42	1.6213302069	1.6390243903	
10	2	43	1.6191937976	1.6380952381	
10	2	44	1.6174406044	1.6372093024	
10	2	45	1.6159735561	1.6363636364	
10	2	46	1.6102776613	1.6355555556	
10	2	47	1.6071783428	1.6347826087	
10	2	48	1.6047826798	1.6340425532	
10	2	49	1.6018680635	1.6333333334	
10	2	50	1.6003198832	1.6326530613	
10	2	51	1.5959904317	1.6320000000	
10	2	52	1.5928743586	1.6313725491	
10	2	53	1.5903424666	1.6307692308	
10	2	54	1.5878030706	1.6301886793	
10	2	55	1.5856621623	1.6296296297	
10	2	56	1.5808404314	1.6000000000	
10	2	57	1.5764429498	1.6000000000	
10	2	58	1.5729631504	1.6000000000	
10	2	59	1.5699537159	1.6000000000	
10	2	60	1.5663909396	1.6000000000	
10	2	61	1.5633862851	1.6000000000	
10	2	62	1.5600773709	1.6000000000	
10	2	63	1.5580723918	1.6000000000	
10	2	64	1.5548301659	1.6000000000	
10	2	65	1.5519937668	1.6000000000	
10	2	66	1.5491691665	1.6000000000	
10	2	67	1.5469978080	1.6000000000	
10	2	68	1.5438595566	1.6000000000	
10	2	69	1.5414622789	1.6000000000	
10	2	70	1.5396647731	1.6000000000	

10	2	71	1.5373218085	1.6000000000		
10	2	72	1.5346427051	1.6000000000		
10	2	73	1.5325277861	1.6000000000		
10	2	74	1.5301942990	1.6000000000		
10	2	75	1.5276355521	1.6000000000		
10	2	76	1.5256153515	1.6000000000		
10	2	77	1.5237073974	1.6000000000		
10	2	78	1.5220752312	1.6000000000		
10	2	79	1.5196367998	1.6000000000		
10	2	80	1.5174375676	1.6000000000		
10	2	81	1.5167871338	1.6000000000		
10	2	82	1.5133959708	1.6000000000		
10	2	83	1.5117589629	1.6000000000		
10	2	84	1.5098688401	1.6000000000		
10	2	85	1.5081412015	1.6000000000		
10	2	86	1.5062761226	1.6000000000		
10	2	87	1.5046556636	1.6000000000		
10	2	88	1.5027099984	1.6000000000		
10	2	89	1.5006668001	1.6000000000		
10	2	90	1.5001335752	1.6000000000		
10	2	91	1.4973830935	1.6000000000		
10	2	92	1.4958078219	1.6000000000		
10	2	93	1.4940103463	1.6000000000		
10	2	94	1.4929204887	1.6000000000		
10	2	95	1.4907527668	1.6000000000		
10	2	96	1.4894028815	1.6000000000		
10	2	97	1.4877643860	1.6000000000		
10	2	98	1.4865133046	1.6000000000		
10	2	99	1.4847365072	1.6000000000		
10	2	100	1.4829440759	1.6000000000		
*	10	3	3	2.9999999999	3.0000000000	tight bound
	10	3	4	2.7777777777	2.8000000000	
*	10	3	5	2.6249999999	2.6250000000	
*	10	3	6	2.5199999999	2.5200000000	
*	10	3	7	2.4499999999	2.4500000000	
*	10	3	8	2.3999999999	2.4000000000	
*	10	3	9	2.3624999999	2.3625000000	
*	10	3	10	2.3333333333	2.3333333334	
*	10	3	11	2.3099999999	2.3100000000	
*	10	3	12	2.2909090909	2.2909090910	
*	10	3	13	2.2749999999	2.2750000000	
*	10	3	14	2.2615384615	2.2615384616	
*	10	3	15	2.2499999999	2.2500000000	
*	10	3	16	2.2399999999	2.2400000000	
*	10	3	17	2.2312499999	2.2312500000	
*	10	3	18	2.2235294117	2.2235294118	
*	10	3	19	2.2166666666	2.2166666667	
*	10	3	20	2.2105263157	2.2105263158	
*	10	3	21	2.2049999999	2.2050000000	
*	10	3	22	2.1999999999	2.2000000000	
*	10	3	23	2.1954545454	2.1954545455	

* 10	3	24	2.1913043478	2.1913043479	
* 10	3	25	2.1874999999	2.1875000000	
* 10	3	26	2.1839999999	2.1840000000	
* 10	3	27	2.1807692307	2.1807692308	
* 10	3	28	2.1777777777	2.1777777778	
* 10	3	29	2.1749999999	2.1750000000	
* 10	3	30	2.1724137931	2.1724137932	
* 10	3	31	2.1699999999	2.1700000000	
* 10	3	32	2.1677419354	2.1677419355	
* 10	3	33	2.1656249999	2.1656250000	
* 10	3	34	2.1636363636	2.1636363637	
* 10	3	35	2.1617647058	2.1617647059	
* 10	3	36	2.1599999999	2.1600000000	
* 10	3	37	2.1583333333	2.1583333334	
* 10	3	38	2.1567567567	2.1567567568	
10	3	39	2.1552631573	2.1552631579	unclear whether bound is tight
10	3	40	2.1538461537	2.1538461539	unclear whether bound is tight
10	3	41	2.1524272729	2.1525000000	
10	3	42	2.1507755724	2.1512195122	
10	3	43	2.1489241529	2.1500000000	
10	3	44	2.1470167707	2.1488372094	
10	3	45	2.1460506167	2.1477272728	
10	3	46	2.1428403438	2.1466666667	
10	3	47	2.1408372390	2.1456521740	
10	3	48	2.1386853443	2.1446808511	
10	3	49	2.1363213718	2.1437500000	
10	3	50	2.1348742241	2.1428571429	
10	3	51	2.1317636534	2.1420000000	
10	3	52	2.1291440072	2.1411764706	
10	3	53	2.1270093716	2.1403846154	
10	3	54	2.1242330491	2.1396226416	
10	3	55	2.1225941432	2.1388888889	
* 10	3	56	2.0999999999	2.1000000000	
* 10	3	57	2.0999999999	2.1000000000	
10	3	58	2.0982220842	2.1000000000	
10	3	59	2.0941097874	2.1000000000	
10	3	60	2.0908591926	2.1000000000	
10	3	61	2.0886972821	2.1000000000	
10	3	62	2.0852593543	2.1000000000	
10	3	63	2.0820779459	2.1000000000	
10	3	64	2.0794150719	2.1000000000	
10	3	65	2.0764956398	2.1000000000	
10	3	66	2.0740027279	2.1000000000	
10	3	67	2.0711376926	2.1000000000	
10	3	68	2.0682239168	2.1000000000	
10	3	69	2.0652575463	2.1000000000	
10	3	70	2.0632777184	2.1000000000	
10	3	71	2.0602115192	2.1000000000	
10	3	72	2.0578406812	2.1000000000	
10	3	73	2.0551236021	2.1000000000	
10	3	74	2.0526479420	2.1000000000	

10	3	75	2.0504215288	2.1000000000	
10	3	76	2.0469296099	2.1000000000	
10	3	77	2.0453815945	2.1000000000	
10	3	78	2.0423625234	2.1000000000	
10	3	79	2.0399402443	2.1000000000	
10	3	80	2.0373373967	2.1000000000	
10	3	81	2.0347083977	2.1000000000	
10	3	82	2.0316126190	2.1000000000	
10	3	83	2.0298409303	2.1000000000	
10	3	84	2.0275202135	2.1000000000	
10	3	85	2.0247305984	2.1000000000	
10	3	86	2.0224463066	2.1000000000	
10	3	87	2.0204046434	2.1000000000	
10	3	88	2.0185419465	2.1000000000	
10	3	89	2.0160407702	2.1000000000	
10	3	90	2.0142004450	2.1000000000	
10	3	91	2.0123777727	2.1000000000	
10	3	92	2.0103730016	2.1000000000	
10	3	93	2.0090991605	2.1000000000	
10	3	94	2.0066559224	2.1000000000	
10	3	95	2.0049473405	2.1000000000	
10	3	96	2.0031172251	2.1000000000	
10	3	97	2.0014736136	2.1000000000	
10	3	98	1.9996120976	2.1000000000	
10	3	99	1.9979765465	2.1000000000	
10	3	100	1.9965698745	2.1000000000	
10	4	50	2.4474833415	2.4489795919	
10	4	51	2.4455409430	2.4480000000	
10	4	52	2.4437200830	2.4470588236	
10	4	53	2.4418267360	2.4461538462	
10	4	54	2.4400548844	2.4452830189	
10	4	55	2.4386745754	2.4444444445	
*	10	4	56	2.3999999999	2.4000000000
*	10	4	57	2.3999999999	2.4000000000
*	10	4	58	2.3999999999	2.4000000000
*	10	4	59	2.3999999999	2.4000000000
	10	4	60	2.3999564632	2.4000000000
	10	4	61	2.3983678036	2.4000000000
	10	4	62	2.3955678609	2.4000000000
	10	4	63	2.3940044014	2.4000000000
	10	4	64	2.3921986567	2.4000000000
	10	4	65	2.3894501083	2.4000000000
	10	4	66	2.3882249052	2.4000000000
	10	4	67	2.3847618862	2.4000000000
	10	4	68	2.3827128945	2.4000000000
	10	4	69	2.3800213146	2.4000000000
	10	4	70	2.3778961833	2.4000000000
	10	4	71	2.3749558053	2.4000000000
	10	4	72	2.3714853778	2.4000000000
	10	4	73	2.3679740550	2.4000000000
	10	4	74	2.3655093641	2.4000000000

10	4	75	2.3625990642	2.4000000000	
10	4	76	2.3593470356	2.4000000000	
10	4	77	2.3567286355	2.4000000000	
10	4	78	2.3544660101	2.4000000000	
10	4	79	2.3515429899	2.4000000000	
10	4	80	2.3486626331	2.4000000000	
10	4	81	2.3456776560	2.4000000000	
10	4	82	2.3433965344	2.4000000000	
10	4	83	2.3414269515	2.4000000000	
10	4	84	2.3394304631	2.4000000000	
10	4	85	2.3366452057	2.4000000000	
10	4	86	2.3344306791	2.4000000000	
10	4	87	2.3328021272	2.4000000000	
10	4	88	2.3301513719	2.4000000000	
10	4	89	2.3281777108	2.4000000000	
10	4	90	2.3265130702	2.4000000000	
10	4	91	2.3246401337	2.4000000000	
10	4	92	2.3224053543	2.4000000000	
10	4	93	2.3201125685	2.4000000000	
10	4	94	2.3180839911	2.4000000000	
10	4	95	2.3161610882	2.4000000000	
10	4	96	2.3141982186	2.4000000000	
10	4	97	2.3122017344	2.4000000000	
10	4	98	2.3106247789	2.4000000000	
10	4	99	2.3086381982	2.4000000000	
10	4	100	2.3063778165	2.4000000000	
10	5	50	2.5499773999	2.5510204082	
10	5	55	2.5433584078	2.5462962963	
10	5	56	2.4999999985	2.5000000000	unclear whether bound is tight
10	5	88	2.4999995807	2.5000000000	
*	11	1 3	0.9999999999	1.0000000000	tight bound
*	11	1 4	0.9999999999	1.0000000000	tight bound
*	11	1 5	0.9999999999	1.0000000000	tight bound
*	11	1 6	0.9999999999	1.0000000000	tight bound
*	11	1 7	0.9999999999	1.0000000000	tight bound
*	11	1 8	0.9999999999	1.0000000000	tight bound
*	11	1 9	0.9999999999	1.0000000000	tight bound
*	11	1 10	0.9999999999	1.0000000000	tight bound
*	11	1 11	0.9999999999	1.0000000000	tight bound
*	11	1 12	0.9917355371	0.9917355372	tight bound
	11	1 13	0.9817779155	0.9848484849	
	11	1 14	0.9751071940	0.9790209791	
	11	1 15	0.9696286013	0.9740259741	Henry Cohn [2]
	11	1 16	0.9681753716	0.9696969697	
	11	1 17	0.9630502549	0.9659090910	
	11	1 18	0.9599999999	0.9625668450	
	11	1 19	0.9543790921	0.9595959596	Henry Cohn, 2025
	11	1 20	0.9537099157	0.9569377991	Henry Cohn, 2025
	11	1 21	0.9485857426	0.9545454546	
	11	1 22	0.9466719366	0.9523809524	
	11	1 23	0.9442751814	0.9504132232	Henry Cohn, 2024

11	1	24	0.9403934453	0.9486166008	Henry Cohn, 2025
11	1	25	0.9385278686	0.9469696970	Henry Cohn, 2025
11	1	26	0.9379801645	0.9454545455	
11	1	27	0.9359029921	0.9440559441	
11	1	28	0.9358677170	0.9427609428	Henry Cohn, 2025
11	1	29	0.9347117305	0.9415584416	Henry Cohn, 2025
11	1	30	0.9347102627	0.9404388715	
11	1	31	0.9284382907	0.9393939394	
11	1	32	0.9269380546	0.9384164223	
11	1	33	0.9247085866	0.9375000000	Henry Cohn, 2024
11	1	34	0.9222978157	0.9366391185	Henry Cohn, 2024
11	1	35	0.9221771420	0.9358288771	Henry Cohn, 2024
11	1	36	0.9198022830	0.9350649351	Henry Cohn, 2024
11	1	37	0.9194104805	0.9343434344	Henry Cohn, 2025
11	1	38	0.9186539797	0.9336609337	
11	1	39	0.9176886291	0.9330143541	Henry Cohn, 2025
11	1	40	0.9110519677	0.9324009325	Henry Cohn, 2024
11	1	41	0.9097856506	0.9318181819	Henry Cohn, 2024
11	1	42	0.9090966500	0.9312638581	Henry Cohn, 2025
11	1	43	0.9068865456	0.9307359308	Henry Cohn, 2025
11	1	44	0.9058997074	0.9302325582	Henry Cohn, 2024
11	1	45	0.9055665436	0.9297520662	Henry Cohn, 2025
11	1	46	0.9051987820	0.9292929293	Henry Cohn, 2025
11	1	47	0.9036398976	0.9288537550	
11	1	48	0.9001480078	0.9284332689	Henry Cohn, 2025
11	1	49	0.8996637148	0.9280303031	Henry Cohn, 2024
11	1	50	0.8967271884	0.9276437848	Henry Cohn, 2025
11	1	51	0.8948849784	0.9272727273	
11	1	52	0.8939471783	0.9269162211	
11	1	53	0.8935096402	0.9265734266	
11	1	54	0.8935096402	0.9262435678	
11	1	55	0.8925573930	0.9259259260	
11	1	56	0.8925573930	0.9256198348	
11	1	57	0.8910705268	0.9253246754	
11	1	58	0.8904693173	0.9250398725	
11	1	59	0.8903312723	0.9247648903	
11	1	60	0.8903312723	0.9244992296	
11	1	61	0.8898548216	0.9242424243	
11	1	62	0.8891150779	0.9239940388	
11	1	63	0.8888901191	0.9237536657	
11	1	64	0.8888901191	0.9235209236	
11	1	65	0.8888888890	0.9232954546	Henry Cohn, 2024
11	1	66	0.8888888888	0.9230769231	
11	1	67	0.8888888888	0.9090909091	
11	1	68	0.8888888888	0.9090909091	
11	1	69	0.8888888888	0.9090909091	
11	1	70	0.8888888888	0.9090909091	
11	1	71	0.8888888888	0.9090909091	
11	1	72	0.8888888888	0.9090909091	
11	1	73	0.8888888888	0.9090909091	
11	1	74	0.8888888888	0.9090909091	

11	1	75	0.8888888888	0.9090909091		
11	1	76	0.8888888888	0.9090909091	Henry Cohn, 2024	
11	1	77	0.8888888888	0.9090909091	Henry Cohn, 2024	
11	1	78	0.8888888888	0.9090909091	Henry Cohn, 2024	
11	1	79	0.8582817754	0.9090909091		
11	1	80	0.8565709088	0.9090909091		
11	1	81	0.8543163662	0.9090909091		
11	1	82	0.8519210475	0.9090909091		
11	1	83	0.8498322773	0.9090909091		
*	11	2	3	1.9999999999	2.0000000000	tight bound
*	11	2	4	1.9999999999	2.0000000000	tight bound
*	11	2	5	1.9999999999	2.0000000000	tight bound
	11	2	6	1.9599999999	1.9636363637	
	11	2	7	1.9088129953	1.9090909091	
*	11	2	8	1.8701298701	1.8701298702	
*	11	2	9	1.8409090909	1.8409090910	
*	11	2	10	1.8181818181	1.8181818182	
*	11	2	11	1.7999999999	1.8000000000	
*	11	2	12	1.7851239669	1.7851239670	
*	11	2	13	1.7727272727	1.7727272728	
*	11	2	14	1.7622377622	1.7622377623	
*	11	2	15	1.7532467532	1.7532467533	
*	11	2	16	1.7454545454	1.7454545455	
*	11	2	17	1.7386363636	1.7386363637	
*	11	2	18	1.7326203208	1.7326203209	
*	11	2	19	1.7272727272	1.7272727273	
*	11	2	20	1.7224880382	1.7224880383	
*	11	2	21	1.7181818181	1.7181818182	
*	11	2	22	1.7142857142	1.7142857143	
*	11	2	23	1.7107438016	1.7107438017	
*	11	2	24	1.7075098814	1.7075098815	
*	11	2	25	1.7045454545	1.7045454546	
*	11	2	26	1.7018181818	1.7018181819	
*	11	2	27	1.6993006993	1.6993006994	
*	11	2	28	1.6969696969	1.6969696970	
	11	2	29	1.6948051947	1.6948051949	unclear whether bound is tight
*	11	2	30	1.6927899686	1.6927899687	
*	11	2	31	1.6909090909	1.6909090910	
	11	2	32	1.6891487650	1.6891495602	
*	11	2	33	1.6874999999	1.6875000000	
	11	2	34	1.6858325432	1.6859504133	
	11	2	35	1.6838057950	1.6844919787	
	11	2	36	1.6817829421	1.6831168832	
	11	2	37	1.6797569476	1.6818181819	
	11	2	38	1.6775148672	1.6805896806	
	11	2	39	1.6754291358	1.6794258374	
	11	2	40	1.6732055209	1.6783216784	
	11	2	41	1.6712335869	1.6772727273	
	11	2	42	1.6697789330	1.6762749446	
	11	2	43	1.6690854752	1.6753246754	
	11	2	44	1.6687460213	1.6744186047	

11	2	45	1.6633045534	1.6735537191		
11	2	46	1.6597144818	1.6727272728		
11	2	47	1.6573638011	1.6719367589		
11	2	48	1.6547965201	1.6711798840		
11	2	49	1.6522381105	1.6704545455		
11	2	50	1.6497973528	1.6697588127		
11	2	51	1.6464106598	1.6690909091		
11	2	52	1.6440496081	1.6684491979		
11	2	53	1.6415284519	1.6678321679		
11	2	54	1.6399349232	1.6672384220		
11	2	55	1.6372372612	1.6666666667		
11	2	56	1.6351917426	1.6661157025		
11	2	57	1.6328214294	1.6655844156		
11	2	58	1.6303434705	1.6650717704		
11	2	59	1.6287342109	1.6645768026		
11	2	60	1.6268909063	1.6640986133		
11	2	61	1.6241506658	1.6636363637		
11	2	62	1.6221132930	1.6631892698		
11	2	63	1.6201042562	1.6627565983		
11	2	64	1.6180708728	1.6623376624		
11	2	65	1.6159959440	1.6619318182		
11	2	66	1.6147708645	1.6615384616		
11	2	67	1.6107995975	1.6363636364		
11	2	68	1.6080670059	1.6363636364		
11	2	69	1.6051351419	1.6363636364		
11	2	70	1.6028460665	1.6363636364		
11	2	71	1.5999397533	1.6363636364		
11	2	72	1.5977487210	1.6363636364		
11	2	73	1.5952224550	1.6363636364		
11	2	74	1.5930938107	1.6363636364		
11	2	75	1.5910000857	1.6363636364		
11	2	76	1.5885712523	1.6363636364		
11	2	77	1.5863668230	1.6363636364		
11	2	78	1.5844586223	1.6363636364		
11	2	79	1.5822642094	1.6363636364		
11	2	80	1.5800154935	1.6363636364		
11	2	81	1.5786058528	1.6363636364		
11	2	82	1.5764838293	1.6363636364		
11	2	83	1.5744559193	1.6363636364		
*	11	3	3	2.9999999999	3.0000000000	tight bound
	11	3	4	2.8888888888	2.9090909091	
*	11	3	5	2.7272727272	2.7272727273	
*	11	3	6	2.6181818181	2.6181818182	
*	11	3	7	2.5454545454	2.5454545455	
*	11	3	8	2.4935064935	2.4935064936	
*	11	3	9	2.4545454545	2.4545454546	
*	11	3	10	2.4242424242	2.4242424243	
*	11	3	11	2.3999999999	2.4000000000	
*	11	3	12	2.3801652892	2.3801652893	
*	11	3	13	2.3636363636	2.3636363637	
*	11	3	14	2.3496503496	2.3496503497	

* 11 3 15	2.3376623376	2.3376623377
* 11 3 16	2.3272727272	2.3272727273
* 11 3 17	2.3181818181	2.3181818182
* 11 3 18	2.3101604278	2.3101604279
* 11 3 19	2.3030303030	2.3030303031
* 11 3 20	2.2966507177	2.2966507178
* 11 3 21	2.2909090909	2.2909090910
* 11 3 22	2.2857142857	2.2857142858
* 11 3 23	2.2809917355	2.2809917356
* 11 3 24	2.2766798418	2.2766798419
* 11 3 25	2.2727272727	2.2727272728
* 11 3 26	2.2690909090	2.2690909091
* 11 3 27	2.2657342657	2.2657342658
* 11 3 28	2.2626262626	2.2626262627
* 11 3 29	2.2597402597	2.2597402598
* 11 3 30	2.2570532915	2.2570532916
* 11 3 31	2.2545454545	2.2545454546
* 11 3 32	2.2521994134	2.2521994135
* 11 3 33	2.2499999999	2.2500000000
* 11 3 34	2.2479338842	2.2479338843
* 11 3 35	2.2459893048	2.2459893049
* 11 3 36	2.2441558441	2.2441558442
* 11 3 37	2.2424242424	2.2424242425
* 11 3 38	2.2407862407	2.2407862408
* 11 3 39	2.2392344497	2.2392344498
* 11 3 40	2.2377622377	2.2377622378
* 11 3 41	2.2363636363	2.2363636364
* 11 3 42	2.2350332594	2.2350332595
* 11 3 43	2.2337662337	2.2337662338
* 11 3 44	2.2325581395	2.2325581396
* 11 3 45	2.2314049586	2.2314049587
11 3 46	2.2302986855	2.2303030304
11 3 47	2.2291085048	2.2292490119
11 3 48	2.2277692261	2.2282398453
11 3 49	2.2262599170	2.2272727273
11 3 50	2.2247217500	2.2263450835
11 3 51	2.2230842660	2.2254545455
11 3 52	2.2212218601	2.2245989305
11 3 53	2.2196062874	2.2237762238
11 3 54	2.2177727866	2.2229845627
11 3 55	2.2160562344	2.2222222223
11 3 56	2.2141803011	2.2214876034
11 3 57	2.2120800004	2.2207792208
11 3 58	2.2104652437	2.2200956938
11 3 59	2.2081263751	2.2194357367
11 3 60	2.2064567205	2.2187981511
11 3 61	2.2047061696	2.2181818182
11 3 62	2.2026570612	2.2175856930
11 3 63	2.2010545822	2.2170087977
11 3 64	2.1987523504	2.2164502165
11 3 65	2.1964480234	2.2159090910

11	3	66	2.1949295362	2.2153846154		
*	11	3	67	2.1818181818	2.1818181819	
	11	3	68	2.1796666088	2.1818181819	
	11	3	69	2.1760674306	2.1818181819	
	11	3	70	2.1724607962	2.1818181819	
	11	3	71	2.1696446288	2.1818181819	
	11	3	72	2.1670581856	2.1818181819	
	11	3	73	2.1648495967	2.1818181819	
	11	3	74	2.1621319488	2.1818181819	
	11	3	75	2.1596882951	2.1818181819	
	11	3	76	2.1573945567	2.1818181819	
	11	3	77	2.1549042856	2.1818181819	
	11	3	78	2.1526472816	2.1818181819	
	11	3	79	2.1504620672	2.1818181819	
	11	3	80	2.1482500235	2.1818181819	
	11	3	81	2.1463056966	2.1818181819	
	11	3	82	2.1437971644	2.1818181819	
	11	3	83	2.1399504595	2.1818181819	
*	11	4	51	2.5963636363	2.5963636364	
*	11	4	52	2.5953654188	2.5953654189	
*	11	4	53	2.5944055944	2.5944055945	
	11	4	54	2.5934819008	2.5934819898	unclear whether bound is tight
	11	4	55	2.5925311289	2.5925925926	
	11	4	56	2.5914017299	2.5917355372	
	11	4	57	2.5901288704	2.5909090910	
	11	4	58	2.5887385732	2.5901116428	
	11	4	59	2.5873967458	2.5893416928	
	11	4	60	2.5856899129	2.5885978429	
	11	4	61	2.5843916118	2.5878787879	
	11	4	62	2.5826971612	2.5871833085	
	11	4	63	2.5810854763	2.5865102640	
	11	4	64	2.5794344419	2.5858585859	
	11	4	65	2.5779064189	2.5852272728	
	11	4	66	2.5777278197	2.5846153847	
*	11	4	67	2.5454545454	2.5454545455	
*	11	4	68	2.5454545454	2.5454545455	
	11	4	69	2.5454545210	2.5454545455	unclear whether bound is tight
	11	4	70	2.5449868775	2.5454545455	
	11	4	71	2.5431609725	2.5454545455	
	11	4	72	2.5409135202	2.5454545455	
	11	4	73	2.5396456987	2.5454545455	
	11	4	74	2.5380739779	2.5454545455	
	11	4	75	2.5361576030	2.5454545455	
	11	4	76	2.5342233677	2.5454545455	
	11	4	77	2.5319750609	2.5454545455	
	11	4	78	2.5305438055	2.5454545455	
	11	4	79	2.5279959454	2.5454545455	
	11	4	80	2.5261479193	2.5454545455	
	11	4	81	2.5241759911	2.5454545455	
	11	4	82	2.5221360342	2.5454545455	
	11	5	66	2.7673627240	2.7692307693	

* 12	1	3	0.9999999999	1.0000000000	tight bound
* 12	1	4	0.9999999999	1.0000000000	tight bound
* 12	1	5	0.9999999999	1.0000000000	tight bound
* 12	1	6	0.9999999999	1.0000000000	tight bound
* 12	1	7	0.9999999999	1.0000000000	tight bound
* 12	1	8	0.9999999999	1.0000000000	tight bound
* 12	1	9	0.9999999999	1.0000000000	tight bound
* 12	1	10	0.9999999999	1.0000000000	tight bound
* 12	1	11	0.9999999999	1.0000000000	tight bound
* 12	1	12	0.9999999999	1.0000000000	tight bound
* 12	1	13	0.9930555555	0.9930555556	tight bound
	12	14	0.9848824667	0.9871794872	Henry Cohn [2]
	12	15	0.9786237766	0.9821428572	Henry Cohn [2]
	12	16	0.9739713440	0.9777777778	
	12	17	0.9707065575	0.9739583334	
	12	18	0.9668782708	0.9705882353	Henry Cohn, 2024
	12	19	0.9643604126	0.9675925926	Henry Cohn, 2025
	12	20	0.9615657985	0.9649122808	Henry Cohn, 2025
	12	21	0.9600113891	0.9625000000	Henry Cohn, 2025
	12	22	0.9559245905	0.9603174604	
	12	23	0.9544511501	0.9583333334	
	12	24	0.9544511501	0.9565217392	
	12	25	0.9499464805	0.9548611112	Henry Cohn, 2025
	12	26	0.9494803514	0.9533333334	Henry Cohn, 2025
	12	27	0.9442926249	0.9519230770	Henry Cohn, 2025
	12	28	0.9423089463	0.9506172840	Henry Cohn, 2024
	12	29	0.9397414052	0.9494047620	Henry Cohn, 2024
	12	30	0.9383679899	0.9482758621	Henry Cohn, 2024
	12	31	0.9375329142	0.9472222223	Henry Cohn, 2025
	12	32	0.9375000444	0.9462365592	
	12	33	0.9374999999	0.9453125000	
	12	34	0.9374999999	0.9444444445	
	12	35	0.9374999999	0.9436274510	
	12	36	0.9374999999	0.9428571429	
	12	37	0.9374999999	0.9421296297	
	12	38	0.9374999999	0.9414414415	
	12	39	0.9374999999	0.9407894737	
	12	40	0.9354081173	0.9401709402	
	12	41	0.9285211720	0.9395833334	
	12	42	0.9269265447	0.9390243903	
	12	43	0.9246444992	0.9384920635	Henry Cohn, 2024
	12	44	0.9237067193	0.9379844962	Henry Cohn, 2024
	12	45	0.9236071603	0.9375000000	Henry Cohn, 2025
	12	46	0.9236067977	0.9370370371	
	12	47	0.9236067977	0.9365942029	
	12	48	0.9236067977	0.9361702128	
	12	49	0.9177768416	0.9357638889	
	12	50	0.9163211204	0.9353741497	Henry Cohn, 2025
	12	51	0.9059711300	0.9350000000	
	12	52	0.9053953200	0.9346405229	
	12	53	0.9045363823	0.9342948718	

12	1	54	0.9035623652	0.9339622642		
12	1	55	0.9026610548	0.9336419754		
12	1	56	0.9021025138	0.9333333334		
12	1	57	0.9010704788	0.9330357143		
12	1	58	0.9001388249	0.9327485381		
12	1	59	0.8994919322	0.9324712644		
12	1	60	0.8988369188	0.9322033899		
12	1	61	0.8982171518	0.9319444445		
12	1	62	0.8973238261	0.9316939891		
12	1	63	0.8967360791	0.9314516130		
12	1	64	0.8960446076	0.9312169313		
12	1	65	0.8955490203	0.9309895834		
12	1	66	0.8949176305	0.9307692308		
12	1	67	0.8940777222	0.9305555556		
12	1	68	0.8935613463	0.9303482588		
12	1	69	0.8931981598	0.9301470589		
12	1	70	0.8921872714	0.9299516909		
12	1	71	0.8921203940	0.9297619048		
12	1	72	0.8908989892	0.9295774648		
12	1	73	0.8904487563	0.9293981482		
12	1	74	0.8899354943	0.9292237443		
12	1	75	0.8889792736	0.9290540541		
12	1	76	0.8888888888	0.9288888889		
12	1	77	0.8888888888	0.9287280702		
12	1	78	0.8888888888	0.9285714286		
12	1	79	0.8856358863	0.9166666667		
12	1	80	0.8835601501	0.9166666667		
12	1	81	0.8829017669	0.9166666667		
12	1	82	0.8808871355	0.9166666667		
12	1	83	0.8793120150	0.9166666667		
12	1	84	0.8783024099	0.9166666667		
12	1	85	0.8770020029	0.9166666667		
12	1	86	0.8760424784	0.9166666667		
12	1	87	0.8745895765	0.9166666667		
12	1	88	0.8737428740	0.9166666667		
12	1	89	0.8721612459	0.9166666667		
12	1	90	0.8706332749	0.9166666667		
12	1	91	0.8698186584	0.9166666667		
12	1	92	0.8679406193	0.9166666667		
12	1	93	0.8665782618	0.9166666667		
12	1	94	0.8645273436	0.9166666667		
*	12	2	3	1.9999999999	2.0000000000	tight bound
*	12	2	4	1.9999999999	2.0000000000	tight bound
*	12	2	5	1.9999999999	2.0000000000	tight bound
*	12	2	6	1.9999999999	2.0000000000	tight bound
*	12	2	7	1.9444444444	1.9444444445	
*	12	2	8	1.9047619047	1.9047619048	
*	12	2	9	1.8749999999	1.8750000000	
*	12	2	10	1.8518518518	1.8518518519	
*	12	2	11	1.8333333333	1.8333333334	
*	12	2	12	1.8181818181	1.8181818182	

* 12	2	13	1.8055555555	1.8055555556	
* 12	2	14	1.7948717948	1.7948717949	
* 12	2	15	1.7857142857	1.7857142858	
* 12	2	16	1.7777777777	1.7777777778	
* 12	2	17	1.7708333333	1.7708333334	
* 12	2	18	1.7647058823	1.7647058824	
* 12	2	19	1.7592592592	1.7592592593	
* 12	2	20	1.7543859649	1.7543859650	
* 12	2	21	1.7499999999	1.7500000000	
* 12	2	22	1.7460317460	1.7460317461	
* 12	2	23	1.7424242424	1.7424242425	
* 12	2	24	1.7391304347	1.7391304348	
* 12	2	25	1.7361111111	1.7361111112	
* 12	2	26	1.7333333333	1.7333333334	
* 12	2	27	1.7307692307	1.7307692308	
* 12	2	28	1.7283950617	1.7283950618	
* 12	2	29	1.7261904761	1.7261904762	
* 12	2	30	1.7241379310	1.7241379311	
* 12	2	31	1.7222222222	1.7222222223	
* 12	2	32	1.7204301075	1.7204301076	
* 12	2	33	1.7187499999	1.7187500000	
* 12	2	34	1.7171717171	1.7171717172	
12	2	35	1.7156862561	1.7156862746	unclear whether bound is tight
12	2	36	1.7142849402	1.7142857143	
12	2	37	1.7128951027	1.7129629630	
12	2	38	1.7114069196	1.7117117118	
12	2	39	1.7097313772	1.7105263158	
12	2	40	1.7082076422	1.7094017095	
12	2	41	1.7063613416	1.7083333334	
12	2	42	1.7047172384	1.7073170732	
12	2	43	1.7028054036	1.7063492064	
12	2	44	1.7021113805	1.7054263566	
12	2	45	1.6991966011	1.7045454546	
12	2	46	1.6973569022	1.7037037038	
12	2	47	1.6959846782	1.7028985508	
12	2	48	1.6947391528	1.7021276596	
12	2	49	1.6917124881	1.7013888889	
12	2	50	1.6897650411	1.7006802722	
12	2	51	1.6869535406	1.7000000000	
12	2	52	1.6851645010	1.6993464053	
12	2	53	1.6834044889	1.6987179488	
12	2	54	1.6817342996	1.6981132076	
12	2	55	1.6795836466	1.6975308642	
12	2	56	1.6774158104	1.6969696970	
12	2	57	1.6755091521	1.6964285715	
12	2	58	1.6736951044	1.6959064328	
12	2	59	1.6718032518	1.6954022989	
12	2	60	1.6699434460	1.6949152543	
12	2	61	1.6680452399	1.6944444445	
12	2	62	1.6661656352	1.6939890711	
12	2	63	1.6643218767	1.6935483871	

12	2	64	1.6624683476	1.6931216932		
12	2	65	1.6605586720	1.6927083334		
12	2	66	1.6588301480	1.6923076924		
12	2	67	1.6572946971	1.6919191920		
12	2	68	1.6557462987	1.6915422886		
12	2	69	1.6535891863	1.6911764706		
12	2	70	1.6518437858	1.6908212561		
12	2	71	1.6500539606	1.6904761905		
12	2	72	1.6484294020	1.6901408451		
12	2	73	1.6469918405	1.6898148149		
12	2	74	1.6453091758	1.6894977169		
12	2	75	1.6433168718	1.6891891892		
12	2	76	1.6419559480	1.6888888889		
12	2	77	1.6399310857	1.6885964913		
12	2	78	1.6391193258	1.6883116884		
12	2	79	1.6366666436	1.6666666667		
12	2	80	1.6341673183	1.6666666667		
12	2	81	1.6320687903	1.6666666667		
12	2	82	1.6302840350	1.6666666667		
12	2	83	1.6281291984	1.6666666667		
12	2	84	1.6263703629	1.6666666667		
12	2	85	1.6242962710	1.6666666667		
12	2	86	1.6228039950	1.6666666667		
12	2	87	1.6208163027	1.6666666667		
12	2	88	1.6187735210	1.6666666667		
12	2	89	1.6171912596	1.6666666667		
12	2	90	1.6156475921	1.6666666667		
12	2	91	1.6138099617	1.6666666667		
12	2	92	1.6122743946	1.6666666667		
12	2	93	1.6104879900	1.6666666667		
12	2	94	1.6091370814	1.6666666667		
*	12	3	3	2.9999999999	3.0000000000	tight bound
*	12	3	4	2.9999999999	3.0000000000	tight bound
*	12	3	5	2.8124999999	2.8125000000	
*	12	3	6	2.6999999999	2.7000000000	
*	12	3	7	2.6249999999	2.6250000000	
*	12	3	8	2.5714285714	2.5714285715	
*	12	3	9	2.5312499999	2.5312500000	
*	12	3	10	2.4999999999	2.5000000000	
*	12	3	11	2.4749999999	2.4750000000	
*	12	3	12	2.4545454545	2.4545454546	
*	12	3	13	2.4374999999	2.4375000000	
*	12	3	14	2.4230769230	2.4230769231	
*	12	3	15	2.4107142857	2.4107142858	
*	12	3	16	2.3999999999	2.4000000000	
*	12	3	17	2.3906249999	2.3906250000	
*	12	3	18	2.3823529411	2.3823529412	
*	12	3	19	2.3749999999	2.3750000000	
*	12	3	20	2.3684210526	2.3684210527	
*	12	3	21	2.3624999999	2.3625000000	
*	12	3	22	2.3571428571	2.3571428572	

* 12 3 23	2.3522727272	2.3522727273
* 12 3 24	2.3478260869	2.3478260870
* 12 3 25	2.3437499999	2.3437500000
* 12 3 26	2.3399999999	2.3400000000
* 12 3 27	2.3365384615	2.3365384616
* 12 3 28	2.3333333333	2.3333333334
* 12 3 29	2.3303571428	2.3303571429
* 12 3 30	2.3275862068	2.3275862069
* 12 3 31	2.3249999999	2.3250000000
* 12 3 32	2.3225806451	2.3225806452
* 12 3 33	2.3203124999	2.3203125000
* 12 3 34	2.3181818181	2.3181818182
* 12 3 35	2.3161764705	2.3161764706
* 12 3 36	2.3142857142	2.3142857143
* 12 3 37	2.3124999999	2.3125000000
* 12 3 38	2.3108108108	2.3108108109
* 12 3 39	2.3092105263	2.3092105264
* 12 3 40	2.3076923076	2.3076923077
* 12 3 41	2.3062499999	2.3062500000
* 12 3 42	2.3048780487	2.3048780488
* 12 3 43	2.3035714285	2.3035714286
* 12 3 44	2.3023255813	2.3023255814
* 12 3 45	2.3011363636	2.3011363637
* 12 3 46	2.2999999999	2.3000000000
* 12 3 47	2.2989130434	2.2989130435
* 12 3 48	2.2978723404	2.2978723405
* 12 3 49	2.2968749999	2.2968750000
* 12 3 50	2.2959183673	2.2959183674
12 3 51	2.2949991496	2.2950000000
12 3 52	2.2940625934	2.2941176471
12 3 53	2.2929952316	2.2932692308
12 3 54	2.2917458017	2.2924528302
12 3 55	2.2905900848	2.2916666667
12 3 56	2.2893490359	2.2909090910
12 3 57	2.2879824291	2.2901785715
12 3 58	2.2865745896	2.2894736843
12 3 59	2.2852701943	2.2887931035
12 3 60	2.2837895210	2.2881355933
12 3 61	2.2821930183	2.2875000000
12 3 62	2.2807862765	2.2868852460
12 3 63	2.2792252242	2.2862903226
12 3 64	2.2779111398	2.2857142858
12 3 65	2.2762164378	2.2851562500
12 3 66	2.2745035234	2.2846153847
12 3 67	2.2728778938	2.2840909091
12 3 68	2.2713810499	2.2835820896
12 3 69	2.2696516590	2.2830882353
12 3 70	2.2684255439	2.2826086957
12 3 71	2.2665738629	2.2821428572
12 3 72	2.2647834950	2.2816901409
12 3 73	2.2633100923	2.2812500000

12	3	74	2.2617134461	2.2808219179		
12	3	75	2.2600573944	2.2804054055		
12	3	76	2.2581982518	2.2800000000		
12	3	77	2.2565024779	2.2796052632		
12	3	78	2.2548273749	2.2792207793		
12	3	79	2.2493061299	2.2500000000		
12	3	80	2.2440270228	2.2500000000		
12	3	81	2.2413810109	2.2500000000		
12	3	82	2.2381170918	2.2500000000		
12	3	83	2.2363252164	2.2500000000		
12	3	84	2.2327342283	2.2500000000		
12	3	85	2.2297930737	2.2500000000		
12	3	86	2.2273151274	2.2500000000		
12	3	87	2.2258962952	2.2500000000		
12	3	88	2.2243120636	2.2500000000		
12	3	89	2.2221158236	2.2500000000		
12	3	90	2.2199486582	2.2500000000		
12	3	91	2.2181139268	2.2500000000		
12	3	92	2.2161402375	2.2500000000		
12	3	93	2.2141106123	2.2500000000		
12	3	94	2.2120896590	2.2500000000		
*	12	4	50	2.7210884353	2.7210884354	
*	12	4	51	2.7199999999	2.7200000000	
*	12	4	52	2.7189542483	2.7189542484	
*	12	4	53	2.7179487179	2.7179487180	
*	12	4	54	2.7169811320	2.7169811321	
*	12	4	55	2.7160493827	2.7160493828	
*	12	4	56	2.7151515151	2.7151515152	
*	12	4	57	2.7142857142	2.7142857143	
*	12	4	58	2.7134502923	2.7134502924	
*	12	4	59	2.7126436781	2.7126436782	
*	12	4	60	2.7118644067	2.7118644068	
	12	4	61	2.7111111104	2.7111111112	unclear whether bound is tight
	12	4	62	2.7103812619	2.7103825137	
	12	4	63	2.7095949171	2.7096774194	
	12	4	64	2.7086459776	2.7089947090	
	12	4	65	2.7076697320	2.7083333334	
	12	4	66	2.7065884729	2.7076923077	
	12	4	67	2.7054060876	2.7070707071	
	12	4	68	2.7042085158	2.7064676617	
	12	4	69	2.7028355785	2.7058823530	
	12	4	70	2.7016879315	2.7053140097	
	12	4	71	2.7002482462	2.7047619048	
	12	4	72	2.6989605047	2.7042253522	
	12	4	73	2.6976082395	2.7037037038	
	12	4	74	2.6961342265	2.7031963471	
	12	4	75	2.6946416490	2.7027027028	
	12	4	76	2.6934515172	2.7022222223	
	12	4	77	2.6918100770	2.7017543860	
	12	4	78	2.6907870505	2.7012987013	
*	12	4	79	2.6666666666	2.6666666667	

* 12	4	80	2.6666666666	2.6666666667		
* 12	4	81	2.6666666666	2.6666666667		
* 12	4	82	2.6666666666	2.6666666667		
* 12	4	83	2.6666666666	2.6666666667		
* 12	4	84	2.6666666666	2.6666666667		
* 12	4	85	2.6666666666	2.6666666667		
* 12	4	86	2.6666666666	2.6666666667		
* 12	4	87	2.6666666666	2.6666666667		
* 12	4	88	2.6666666666	2.6666666667		
	12	4	89	2.6648739869	2.6666666667	
	12	4	90	2.6636723791	2.6666666667	
	12	4	91	2.6617069770	2.6666666667	
	12	4	92	2.6595563998	2.6666666667	
	12	4	93	2.6587892087	2.6666666667	
	12	5	78	2.9504582094	2.9545454546	
	12	6	78	3.0365665523	3.0389610390	
* 13	1	3	0.9999999999	1.0000000000	tight bound	
* 13	1	4	0.9999999999	1.0000000000	tight bound	
* 13	1	5	0.9999999999	1.0000000000	tight bound	
* 13	1	6	0.9999999999	1.0000000000	tight bound	
* 13	1	7	0.9999999999	1.0000000000	tight bound	
* 13	1	8	0.9999999999	1.0000000000	tight bound	
* 13	1	9	0.9999999999	1.0000000000	tight bound	
* 13	1	10	0.9999999999	1.0000000000	tight bound	
* 13	1	11	0.9999999999	1.0000000000	tight bound	
* 13	1	12	0.9999999999	1.0000000000	tight bound	
* 13	1	13	0.9999999999	1.0000000000	tight bound	
* 13	1	14	0.9940828402	0.9940828403	tight bound	
	13	1	15	0.9876543209	0.9890109891	
	13	1	16	0.9817758633	0.9846153847	
	13	1	17	0.9772809484	0.9807692308	Henry Cohn, 2025
	13	1	18	0.9747366327	0.9773755657	
	13	1	19	0.9723517424	0.9743589744	
	13	1	20	0.9686827440	0.9716599191	
	13	1	21	0.9670166565	0.9692307693	
	13	1	22	0.9648781362	0.9670329671	
	13	1	23	0.9611207212	0.9650349651	Henry Cohn, 2025
	13	1	24	0.9600000052	0.9632107024	Henry Cohn, 2025
	13	1	25	0.9599999999	0.9615384616	
* 13	1	26	0.9599999999	0.9600000000	tight bound	
	13	1	27	0.9524355201	0.9585798817	Henry Cohn, 2024
	13	1	28	0.9514387655	0.9572649573	Henry Cohn, 2024
	13	1	29	0.9488978326	0.9560439561	Henry Cohn, 2025
	13	1	30	0.9471652344	0.9549071619	Henry Cohn, 2025
	13	1	31	0.9462830884	0.9538461539	Henry Cohn, 2024
	13	1	32	0.9454405335	0.9528535981	Henry Cohn, 2025
	13	1	33	0.9432815871	0.9519230770	Henry Cohn, 2024
	13	1	34	0.9427605244	0.9510489511	Henry Cohn, 2025
	13	1	35	0.9420863940	0.9502262444	
	13	1	36	0.9410233703	0.9494505495	Henry Cohn, 2025
	13	1	37	0.9396422979	0.9487179488	Henry Cohn, 2025

13	1	38	0.9381713027	0.9480249481		
13	1	39	0.9375783955	0.9473684211	Henry Cohn, 2025	
13	1	40	0.9375389008	0.9467455622	Henry Cohn, 2025	
13	1	41	0.9375034937	0.9461538462		
13	1	42	0.9375007580	0.9455909944	Henry Cohn, 2025	
13	1	43	0.9375000000	0.9450549451		
13	1	44	0.9375000000	0.9445438283		
13	1	45	0.9375000000	0.9440559441		
13	1	46	0.9375000000	0.9435897436		
13	1	47	0.9375000000	0.9431438128		
13	1	48	0.9375000000	0.9427168577		
13	1	49	0.9375000000	0.9423076924		
13	1	50	0.9375000000	0.9419152277		
13	1	51	0.9375000000	0.9415384616		
13	1	52	0.9375000000	0.9411764706		
13	1	53	0.9292977154	0.9408284024	Henry Cohn, 2025	
13	1	54	0.9222658555	0.9404934688		
13	1	91	0.8907672709	0.9333333334		
*	13	2	3	1.9999999999	2.0000000000	tight bound
*	13	2	4	1.9999999999	2.0000000000	tight bound
*	13	2	5	1.9999999999	2.0000000000	tight bound
*	13	2	6	1.9999999999	2.0000000000	tight bound
	13	2	7	1.9722222222	1.9743589744	
	13	2	8	1.9337352840	1.9340659341	
*	13	2	9	1.9038461538	1.9038461539	
*	13	2	10	1.8803418803	1.8803418804	
*	13	2	11	1.8615384615	1.8615384616	
*	13	2	12	1.8461538461	1.8461538462	
*	13	2	13	1.8333333333	1.8333333334	
*	13	2	14	1.8224852071	1.8224852072	
*	13	2	15	1.8131868131	1.8131868132	
*	13	2	16	1.8051282051	1.8051282052	
*	13	2	17	1.7980769230	1.7980769231	
*	13	2	18	1.7918552036	1.7918552037	
*	13	2	19	1.7863247863	1.7863247864	
*	13	2	20	1.7813765182	1.7813765183	
*	13	2	21	1.7769230769	1.7769230770	
*	13	2	22	1.7728937728	1.7728937729	
*	13	2	23	1.7692307692	1.7692307693	
*	13	2	24	1.7658862876	1.7658862877	
*	13	2	25	1.7628205128	1.7628205129	
*	13	2	26	1.7599999999	1.7600000000	
*	13	2	27	1.7573964497	1.7573964498	
*	13	2	28	1.7549857549	1.7549857550	
*	13	2	29	1.7527472527	1.7527472528	
*	13	2	30	1.7506631299	1.7506631300	
*	13	2	31	1.7487179487	1.7487179488	
*	13	2	32	1.7468982630	1.7468982631	
*	13	2	33	1.7451923076	1.7451923077	
*	13	2	34	1.7435897435	1.7435897436	
*	13	2	35	1.7420814479	1.7420814480	

* 13	2	36	1.7406593406	1.7406593407		
* 13	2	37	1.7393162393	1.7393162394		
* 13	2	38	1.7380457380	1.7380457381		
* 13	2	39	1.7368421052	1.7368421053		
	13	2	40	1.7356996512	1.7357001973	
	13	2	41	1.7344806530	1.7346153847	
	13	2	42	1.7332084018	1.7335834897	
	13	2	43	1.7318682917	1.7326007327	
	13	2	44	1.7304271306	1.7316636852	
	13	2	45	1.7290343294	1.7307692308	
	13	2	46	1.7276352001	1.7299145300	
	13	2	47	1.7261182645	1.7290969900	
	13	2	48	1.7252778365	1.7283142390	
	13	2	49	1.7231403771	1.7275641026	
	13	2	50	1.7217656705	1.7268445840	
	13	2	52	1.7161977524	1.7254901961	
	13	2	91	1.6596375077	1.7111111112	
* 13	3	3	2.9999999999	3.0000000000	tight bound	
* 13	3	4	2.9999999999	3.0000000000	tight bound	
	13	3	5	2.8749999999	2.8846153847	
	13	3	6	2.7692307690	2.7692307693	unclear whether bound is tight
* 13	3	7	2.6923076923	2.6923076924		
* 13	3	8	2.6373626373	2.6373626374		
* 13	3	9	2.5961538461	2.5961538462		
* 13	3	10	2.5641025641	2.5641025642		
* 13	3	11	2.5384615384	2.5384615385		
* 13	3	12	2.5174825174	2.5174825175		
* 13	3	13	2.4999999999	2.5000000000		
* 13	3	14	2.4852071005	2.4852071006		
* 13	3	15	2.4725274725	2.4725274726		
* 13	3	16	2.4615384615	2.4615384616		
* 13	3	17	2.4519230769	2.4519230770		
* 13	3	18	2.4434389140	2.4434389141		
* 13	3	19	2.4358974358	2.4358974359		
* 13	3	20	2.4291497975	2.4291497976		
* 13	3	21	2.4230769230	2.4230769231		
* 13	3	22	2.4175824175	2.4175824176		
* 13	3	23	2.4125874125	2.4125874126		
* 13	3	24	2.4080267558	2.4080267559		
* 13	3	25	2.4038461538	2.4038461539		
* 13	3	26	2.3999999999	2.4000000000		
* 13	3	27	2.3964497041	2.3964497042		
* 13	3	28	2.3931623931	2.3931623932		
* 13	3	29	2.3901098901	2.3901098902		
* 13	3	30	2.3872679045	2.3872679046		
* 13	3	31	2.3846153846	2.3846153847		
* 13	3	32	2.3821339950	2.3821339951		
* 13	3	33	2.3798076923	2.3798076924		
* 13	3	34	2.3776223776	2.3776223777		
* 13	3	35	2.3755656108	2.3755656109		
* 13	3	36	2.3736263736	2.3736263737		

* 13	3	37	2.3717948717	2.3717948718		
* 13	3	38	2.3700623700	2.3700623701		
* 13	3	39	2.3684210526	2.3684210527		
* 13	3	40	2.3668639053	2.3668639054		
* 13	3	41	2.3653846153	2.3653846154		
* 13	3	42	2.3639774859	2.3639774860		
* 13	3	43	2.3626373626	2.3626373627		
* 13	3	44	2.3613595706	2.3613595707		
* 13	3	45	2.3601398601	2.3601398602		
* 13	3	46	2.3589743589	2.3589743590		
* 13	3	47	2.3578595317	2.3578595318		
* 13	3	48	2.3567921440	2.3567921441		
* 13	3	49	2.3557692307	2.3557692308		
* 13	3	50	2.3547880690	2.3547880691		
* 13	3	52	2.3529411764	2.3529411765		
	13	3	65	2.3392699537	2.3437500000	
	13	3	91	2.3055384814	2.3333333334	
	13	4	91	2.7872406035	2.8000000000	
	13	5	91	3.1058033700	3.1111111112	
	13	5	92	3.0769111008	3.0769230770	
	13	6	91	3.2644910682	3.2666666667	
* 14	1	3	0.9999999999	1.0000000000	tight bound	
* 14	1	4	0.9999999999	1.0000000000	tight bound	
* 14	1	5	0.9999999999	1.0000000000	tight bound	
* 14	1	6	0.9999999999	1.0000000000	tight bound	
* 14	1	7	0.9999999999	1.0000000000	tight bound	
* 14	1	8	0.9999999999	1.0000000000	tight bound	
* 14	1	9	0.9999999999	1.0000000000	tight bound	
* 14	1	10	0.9999999999	1.0000000000	tight bound	
* 14	1	11	0.9999999999	1.0000000000	tight bound	
* 14	1	12	0.9999999999	1.0000000000	tight bound	
* 14	1	13	0.9999999999	1.0000000000	tight bound	
* 14	1	14	0.9999999999	1.0000000000	tight bound	
* 14	1	15	0.9948979591	0.9948979592	tight bound	
	14	1	16	0.9886719278	0.9904761905	
	14	1	17	0.9840783026	0.9866071429	Henry Cohn, 2023
	14	1	18	0.9802977940	0.9831932774	
	14	1	19	0.9771711613	0.9801587302	Henry Cohn, 2025
	14	1	20	0.9752088818	0.9774436091	
	14	1	21	0.9720844560	0.9750000000	Henry Cohn, 2024
	14	1	22	0.9699345991	0.9727891157	Henry Cohn, 2025
	14	1	23	0.9682592472	0.9707792208	Henry Cohn, 2024
	14	1	24	0.9666046313	0.9689440994	
	14	1	25	0.9637601368	0.9672619048	Henry Cohn, 2024
	14	1	26	0.9616651911	0.9657142858	Henry Cohn, 2025
	14	1	27	0.9604604341	0.9642857143	Henry Cohn, 2024
	14	1	28	0.9600109385	0.9629629630	Henry Cohn, 2025
	14	1	29	0.9562518613	0.9617346939	Henry Cohn, 2025
	14	1	30	0.9544511977	0.9605911331	Henry Cohn, 2024
	14	1	31	0.9528465226	0.9595238096	Henry Cohn, 2024
	14	1	32	0.9514979997	0.9585253457	Henry Cohn, 2024

14	1	33	0.9500994466	0.9575892858	Henry Cohn, 2025	
14	1	34	0.9484643770	0.9567099568	Henry Cohn, 2024	
14	1	35	0.9470784054	0.9558823530	Henry Cohn, 2024	
14	1	36	0.9456740447	0.9551020409	Henry Cohn, 2024	
14	1	37	0.9443326259	0.9543650794	Henry Cohn, 2024	
14	1	38	0.9430659148	0.9536679537	Henry Cohn, 2025	
14	1	39	0.9417034512	0.9530075188	Henry Cohn, 2025	
14	1	40	0.9407044671	0.9523809524	Henry Cohn, 2025	
14	1	41	0.9401766934	0.9517857143	Henry Cohn, 2025	
14	1	42	0.9394805773	0.9512195122	Henry Cohn, 2025	
14	1	43	0.9388887623	0.9506802722	Henry Cohn, 2025	
14	1	44	0.9382483304	0.9501661130	Henry Cohn, 2025	
14	1	45	0.9380169523	0.9496753247	Henry Cohn, 2025	
14	1	46	0.9379243726	0.9492063493	Henry Cohn, 2025	
14	1	47	0.9379061045	0.9487577640		
14	1	48	0.9377179685	0.9483282675	Henry Cohn, 2025	
14	1	49	0.9376866827	0.9479166667		
14	1	50	0.9376866827	0.9475218659		
14	1	51	0.9375262731	0.9471428572		
14	1	52	0.9374999999	0.9467787115		
14	1	53	0.9374999998	0.9464285715		
14	1	54	0.9374999998	0.9460916443		
14	1	55	0.9374876074	0.9457671958		
14	1	65	0.9198475615	0.9430803572	Henry Cohn, 2025	
*	14	2	3	1.9999999999	2.0000000000	tight bound
*	14	2	4	1.9999999999	2.0000000000	tight bound
*	14	2	5	1.9999999999	2.0000000000	tight bound
*	14	2	6	1.9999999999	2.0000000000	tight bound
*	14	2	7	1.9999999999	2.0000000000	tight bound
*	14	2	8	1.9591836734	1.9591836735	
	14	2	9	1.9285711819	1.9285714286	
*	14	2	10	1.9047619047	1.9047619048	
*	14	2	11	1.8857142857	1.8857142858	
*	14	2	12	1.8701298701	1.8701298702	
*	14	2	13	1.8571428571	1.8571428572	
*	14	2	14	1.8461538461	1.8461538462	
*	14	2	15	1.8367346938	1.8367346939	
*	14	2	16	1.8285714285	1.8285714286	
*	14	2	17	1.8214285714	1.8214285715	
*	14	2	18	1.8151260504	1.8151260505	
*	14	2	19	1.8095238095	1.8095238096	
*	14	2	20	1.8045112781	1.8045112782	
*	14	2	21	1.7999999999	1.8000000000	
*	14	2	22	1.7959183673	1.7959183674	
*	14	2	23	1.7922077922	1.7922077923	
*	14	2	24	1.7888198757	1.7888198758	
*	14	2	25	1.7857142857	1.7857142858	
*	14	2	26	1.7828571428	1.7828571429	
*	14	2	27	1.7802197802	1.7802197803	
*	14	2	28	1.7777777777	1.7777777778	
*	14	2	29	1.7755102040	1.7755102041	

* 14	2	30	1.7733990147	1.7733990148		
* 14	2	31	1.7714285714	1.7714285715		
* 14	2	32	1.7695852534	1.7695852535		
* 14	2	33	1.7678571428	1.7678571429		
* 14	2	34	1.7662337662	1.7662337663		
* 14	2	35	1.7647058823	1.7647058824		
* 14	2	36	1.7632653061	1.7632653062		
* 14	2	37	1.7619047619	1.7619047620		
* 14	2	38	1.7606177606	1.7606177607		
* 14	2	39	1.7593984962	1.7593984963		
* 14	2	40	1.7582417582	1.7582417583		
* 14	2	41	1.7571428571	1.7571428572		
* 14	2	42	1.7560975609	1.7560975610		
	14	2	43	1.7550911899	1.7551020409	
	14	2	44	1.7540989947	1.7541528240	
	14	2	45	1.7530591337	1.7532467533	
	14	2	46	1.7519293994	1.7523809524	
	14	2	47	1.7507975770	1.7515527951	
	14	2	48	1.7495978826	1.7507598785	
	14	2	49	1.7490705842	1.7500000000	
	14	2	50	1.7471917410	1.7492711371	
	14	2	56	1.7393235752	1.7454545455	
* 14	3	3	2.9999999999	3.0000000000	tight bound	
* 14	3	4	2.9999999999	3.0000000000	tight bound	
	14	3	5	2.9374999999	2.9464285715	
	14	3	6	2.8285412523	2.8285714286	
* 14	3	7	2.7499999999	2.7500000000		
* 14	3	8	2.6938775510	2.6938775511		
* 14	3	9	2.6517857142	2.6517857143		
* 14	3	10	2.6190476190	2.6190476191		
* 14	3	11	2.5928571428	2.5928571429		
* 14	3	12	2.5714285714	2.5714285715		
* 14	3	13	2.5535714285	2.5535714286		
* 14	3	14	2.5384615384	2.5384615385		
* 14	3	15	2.5255102040	2.5255102041		
* 14	3	16	2.5142857142	2.5142857143		
* 14	3	17	2.5044642857	2.5044642858		
* 14	3	18	2.4957983193	2.4957983194		
* 14	3	19	2.4880952380	2.4880952381		
* 14	3	20	2.4812030075	2.4812030076		
* 14	3	21	2.4749999999	2.4750000000		
* 14	3	22	2.4693877551	2.4693877552		
* 14	3	23	2.4642857142	2.4642857143		
* 14	3	24	2.4596273291	2.4596273292		
* 14	3	25	2.4553571428	2.4553571429		
* 14	3	26	2.4514285714	2.4514285715		
* 14	3	27	2.4478021978	2.4478021979		
* 14	3	28	2.4444444444	2.4444444445		
* 14	3	29	2.4413265306	2.4413265307		
* 14	3	30	2.4384236453	2.4384236454		
* 14	3	31	2.4357142857	2.4357142858		

* 14	3	32	2.4331797235	2.4331797236		
* 14	3	33	2.4308035714	2.4308035715		
* 14	3	34	2.4285714285	2.4285714286		
* 14	3	35	2.4264705882	2.4264705883		
* 14	3	36	2.4244897959	2.4244897960		
* 14	3	37	2.4226190476	2.4226190477		
* 14	3	38	2.4208494208	2.4208494209		
* 14	3	39	2.4191729323	2.4191729324		
* 14	3	40	2.4175824175	2.4175824176		
* 14	3	41	2.4160714285	2.4160714286		
* 14	3	42	2.4146341463	2.4146341464		
* 14	3	43	2.4132653061	2.4132653062		
* 14	3	44	2.4119601328	2.4119601329		
* 14	3	45	2.4107142857	2.4107142858		
* 14	3	46	2.4095238095	2.4095238096		
* 14	3	47	2.4083850931	2.4083850932		
* 14	3	48	2.4072948328	2.4072948329		
* 14	3	49	2.4062499999	2.4062500000		
* 14	3	50	2.4052478134	2.4052478135		
* 14	3	56	2.3999999999	2.4000000000		
	14	3	70	2.3881194065	2.3913043479	
* 15	1	3	0.9999999999	1.0000000000	tight bound	
* 15	1	4	0.9999999999	1.0000000000	tight bound	
* 15	1	5	0.9999999999	1.0000000000	tight bound	
* 15	1	6	0.9999999999	1.0000000000	tight bound	
* 15	1	7	0.9999999999	1.0000000000	tight bound	
* 15	1	8	0.9999999999	1.0000000000	tight bound	
* 15	1	9	0.9999999999	1.0000000000	tight bound	
* 15	1	10	0.9999999999	1.0000000000	tight bound	
* 15	1	11	0.9999999999	1.0000000000	tight bound	
* 15	1	12	0.9999999999	1.0000000000	tight bound	
* 15	1	13	0.9999999999	1.0000000000	tight bound	
* 15	1	14	0.9999999999	1.0000000000	tight bound	
* 15	1	15	0.9999999999	1.0000000000	tight bound	
* 15	1	16	0.9955555555	0.9955555556	tight bound	
	15	1	17	0.9902481956	0.9916666667	Henry Cohn, 2025
	15	1	18	0.9868130968	0.9882352942	
	15	1	19	0.9826287206	0.9851851852	Henry Cohn, 2025
	15	1	20	0.9798365475	0.9824561404	Henry Cohn, 2025
	15	1	21	0.9795918367	0.9800000000	
	15	1	22	0.9760677434	0.9777777778	
	15	1	23	0.9734967714	0.9757575758	
	15	1	24	0.9719034575	0.9739130435	Henry Cohn, 2024
	15	1	25	0.9698180096	0.9722222223	
	15	1	26	0.9675054613	0.9706666667	
	15	1	27	0.9658280494	0.9692307693	Henry Cohn, 2024
	15	1	28	0.9638514407	0.9679012346	Henry Cohn, 2024
	15	1	29	0.9622932472	0.9666666667	Henry Cohn, 2024
	15	1	30	0.9606843728	0.9655172414	Henry Cohn, 2025
	15	1	31	0.9591676069	0.9644444445	Henry Cohn, 2024
	15	1	32	0.9577699803	0.9634408603	Henry Cohn, 2025

15	1	33	0.9563658940	0.9625000000	Henry Cohn, 2024	
15	1	34	0.9549891750	0.9616161617	Henry Cohn, 2025	
15	1	35	0.9537565866	0.9607843138	Henry Cohn, 2024	
15	1	36	0.9525841002	0.9600000000	Henry Cohn, 2025	
15	1	37	0.9512903014	0.9592592593	Henry Cohn, 2024	
15	1	38	0.9501564771	0.95855855586	Henry Cohn, 2025	
15	1	39	0.9490703759	0.9578947369	Henry Cohn, 2025	
15	1	40	0.9477566213	0.9572649573	Henry Cohn, 2025	
15	1	41	0.9466636432	0.9566666667	Henry Cohn, 2024	
15	1	42	0.9456153555	0.9560975610	Henry Cohn, 2025	
15	1	43	0.9445759622	0.9555555556	Henry Cohn, 2025	
15	1	44	0.9435117190	0.9550387597		
15	1	45	0.9426928860	0.9545454546	Henry Cohn, 2025	
15	1	46	0.9414551949	0.9540740741	Henry Cohn, 2025	
15	1	47	0.9405659944	0.9536231885	Henry Cohn, 2025	
15	1	48	0.9397109210	0.9531914894	Henry Cohn, 2025	
15	1	49	0.9388594788	0.9527777778		
15	1	50	0.9379233901	0.9523809524	Henry Cohn, 2024	
*	15	2	3	1.9999999999	2.0000000000	tight bound
*	15	2	4	1.9999999999	2.0000000000	tight bound
*	15	2	5	1.9999999999	2.0000000000	tight bound
*	15	2	6	1.9999999999	2.0000000000	tight bound
*	15	2	7	1.9999999999	2.0000000000	tight bound
	15	2	8	1.9795918367	1.9809523810	
	15	2	9	1.9497025614	1.9500000000	
*	15	2	10	1.9259259259	1.9259259260	
*	15	2	11	1.9066666666	1.9066666667	
*	15	2	12	1.8909090909	1.8909090910	
*	15	2	13	1.8777777777	1.8777777778	
*	15	2	14	1.8666666666	1.8666666667	
*	15	2	15	1.8571428571	1.8571428572	
*	15	2	16	1.8488888888	1.8488888889	
*	15	2	17	1.8416666666	1.8416666667	
*	15	2	18	1.8352941176	1.8352941177	
*	15	2	19	1.8296296296	1.8296296297	
*	15	2	20	1.8245614035	1.8245614036	
*	15	2	21	1.8199999999	1.8200000000	
*	15	2	22	1.8158730158	1.8158730159	
*	15	2	23	1.8121212121	1.8121212122	
*	15	2	24	1.8086956521	1.8086956522	
*	15	2	25	1.8055555555	1.8055555556	
*	15	2	26	1.8026666666	1.8026666667	
*	15	2	27	1.7999999999	1.8000000000	
*	15	2	28	1.7975308641	1.7975308642	
*	15	2	29	1.7952380952	1.7952380953	
*	15	2	30	1.7931034482	1.7931034483	
*	15	2	31	1.7911111111	1.7911111112	
*	15	2	32	1.7892473118	1.7892473119	
*	15	2	33	1.7874999999	1.7875000000	
*	15	2	34	1.7858585858	1.7858585859	
*	15	2	35	1.7843137254	1.7843137255	

* 15	2	36	1.7828571428	1.7828571429		
* 15	2	37	1.7814814814	1.7814814815		
* 15	2	38	1.7801801801	1.7801801802		
* 15	2	39	1.7789473684	1.7789473685		
* 15	2	40	1.7777777777	1.7777777778		
* 15	2	41	1.7766666666	1.7766666667		
* 15	2	42	1.7756097560	1.7756097561		
* 15	2	43	1.7746031746	1.7746031747		
* 15	2	44	1.7736434108	1.7736434109		
* 15	2	45	1.7727272727	1.7727272728		
	15	2	46	1.7718518263	1.7718518519	unclear whether bound is tight
	15	2	47	1.7709980945	1.7710144928	
	15	2	48	1.7701248214	1.7702127660	
	15	2	49	1.7692215240	1.7694444445	
	15	2	50	1.7682317597	1.7687074830	
	15	2	60	1.7574728085	1.7627118645	
* 15	3	3	2.9999999999	3.0000000000	tight bound	
* 15	3	4	2.9999999999	3.0000000000	tight bound	
* 15	3	5	2.9999999999	3.0000000000	tight bound	
* 15	3	6	2.8799999999	2.8800000000		
* 15	3	7	2.7999999999	2.8000000000		
* 15	3	8	2.7428571428	2.7428571429		
* 15	3	9	2.6999999999	2.7000000000		
* 15	3	10	2.6666666666	2.6666666667		
* 15	3	11	2.6399999999	2.6400000000		
* 15	3	12	2.6181818181	2.6181818182		
* 15	3	13	2.5999999999	2.6000000000		
* 15	3	14	2.5846153846	2.5846153847		
* 15	3	15	2.5714285714	2.5714285715		
* 15	3	16	2.5599999999	2.5600000000		
* 15	3	17	2.5499999999	2.5500000000		
* 15	3	18	2.5411764705	2.5411764706		
* 15	3	19	2.5333333333	2.5333333334		
* 15	3	20	2.5263157894	2.5263157895		
* 15	3	21	2.5199999999	2.5200000000		
* 15	3	22	2.5142857142	2.5142857143		
* 15	3	23	2.5090909090	2.5090909091		
* 15	3	24	2.5043478260	2.5043478261		
* 15	3	25	2.4999999999	2.5000000000		
* 15	3	26	2.4959999999	2.4960000000		
* 15	3	27	2.4923076923	2.4923076924		
* 15	3	28	2.4888888888	2.4888888889		
* 15	3	29	2.4857142857	2.4857142858		
* 15	3	30	2.4827586206	2.4827586207		
* 15	3	31	2.4799999999	2.4800000000		
* 15	3	32	2.4774193548	2.4774193549		
* 15	3	33	2.4749999999	2.4750000000		
* 15	3	34	2.4727272727	2.4727272728		
* 15	3	35	2.4705882352	2.4705882353		
* 15	3	36	2.4685714285	2.4685714286		
* 15	3	37	2.4666666666	2.4666666667		

* 15	3	38	2.4648648648	2.4648648649		
* 15	3	39	2.4631578947	2.4631578948		
* 15	3	40	2.4615384615	2.4615384616		
* 15	3	41	2.4599999999	2.4600000000		
* 15	3	42	2.4585365853	2.4585365854		
* 15	3	43	2.4571428571	2.4571428572		
* 15	3	44	2.4558139534	2.4558139535		
* 15	3	45	2.4545454545	2.4545454546		
* 15	3	46	2.4533333333	2.4533333334		
* 15	3	47	2.4521739130	2.4521739131		
* 15	3	48	2.4510638297	2.4510638298		
* 15	3	49	2.4499999999	2.4500000000		
* 15	3	50	2.4489795918	2.4489795919		
* 15	3	60	2.4406779661	2.4406779662		
	15	3	75	2.4308855203	2.4324324325	
* 16	1	3	0.9999999999	1.0000000000	tight bound	
* 16	1	4	0.9999999999	1.0000000000	tight bound	
* 16	1	5	0.9999999999	1.0000000000	tight bound	
* 16	1	6	0.9999999999	1.0000000000	tight bound	
* 16	1	7	0.9999999999	1.0000000000	tight bound	
* 16	1	8	0.9999999999	1.0000000000	tight bound	
* 16	1	9	0.9999999999	1.0000000000	tight bound	
* 16	1	10	0.9999999999	1.0000000000	tight bound	
* 16	1	11	0.9999999999	1.0000000000	tight bound	
* 16	1	12	0.9999999999	1.0000000000	tight bound	
* 16	1	13	0.9999999999	1.0000000000	tight bound	
* 16	1	14	0.9999999999	1.0000000000	tight bound	
* 16	1	15	0.9999999999	1.0000000000	tight bound	
* 16	1	16	0.9999999999	1.0000000000	tight bound	
* 16	1	17	0.9960937499	0.9960937500	tight bound	
	16	1	18	0.9917355371	0.9926470589	
	16	1	19	0.9876376448	0.9895833334	Henry Cohn, 2025
	16	1	20	0.9850978821	0.9868421053	
	16	1	21	0.9821412271	0.9843750000	
	16	1	22	0.9808005969	0.9821428572	
	16	1	23	0.9795918367	0.9801136364	
	16	1	24	0.9761802947	0.9782608696	
	16	1	25	0.9747366327	0.9765625000	
	16	1	26	0.9734216394	0.9750000000	Henry Cohn, 2025
	16	1	27	0.9708073031	0.9735576924	Henry Cohn, 2024
	16	1	28	0.9691330913	0.9722222223	Henry Cohn, 2025
	16	1	29	0.9674988184	0.9709821429	Henry Cohn, 2024
	16	1	30	0.9660245892	0.9698275863	Henry Cohn, 2024
	16	1	31	0.9646698158	0.9687500000	Henry Cohn, 2024
	16	1	32	0.9632458817	0.9677419355	Henry Cohn, 2024
	16	1	33	0.9619854431	0.9667968750	
	16	1	34	0.9606227333	0.9659090910	Henry Cohn, 2025
	16	1	35	0.9593839016	0.9650735295	Henry Cohn, 2024
	16	1	36	0.9582315556	0.9642857143	Henry Cohn, 2024
	16	1	37	0.9571169981	0.9635416667	Henry Cohn, 2024
	16	1	38	0.9559973612	0.9628378379	Henry Cohn, 2024

16	1	39	0.9549591964	0.9621710527	Henry Cohn, 2025	
16	1	40	0.9539121117	0.9615384616	Henry Cohn, 2025	
16	1	41	0.9529470231	0.9609375000	Henry Cohn, 2024	
16	1	42	0.9519322657	0.9603658537	Henry Cohn, 2024	
16	1	43	0.9509257150	0.9598214286	Henry Cohn, 2025	
16	1	44	0.9499676937	0.9593023256	Henry Cohn, 2025	
16	1	45	0.9489907167	0.9588068182	Henry Cohn, 2025	
16	1	46	0.9480618859	0.9583333334	Henry Cohn, 2025	
16	1	47	0.9471223815	0.9578804348	Henry Cohn, 2024	
16	1	48	0.9461872031	0.9574468086	Henry Cohn, 2025	
16	1	49	0.9453917393	0.9570312500		
16	1	50	0.9445463383	0.9566326531		
*	16	2	3	1.9999999999	2.0000000000	tight bound
*	16	2	4	1.9999999999	2.0000000000	tight bound
*	16	2	5	1.9999999999	2.0000000000	tight bound
*	16	2	6	1.9999999999	2.0000000000	tight bound
*	16	2	7	1.9999999999	2.0000000000	tight bound
*	16	2	8	1.9999999999	2.0000000000	tight bound
*	16	2	9	1.9687499999	1.9687500000	
*	16	2	10	1.9444444444	1.9444444445	
*	16	2	11	1.9249999999	1.9250000000	
*	16	2	12	1.9090909090	1.9090909091	
*	16	2	13	1.8958333333	1.8958333334	
*	16	2	14	1.8846153846	1.8846153847	
*	16	2	15	1.8749999999	1.8750000000	
*	16	2	16	1.8666666666	1.8666666667	
*	16	2	17	1.8593749999	1.8593750000	
*	16	2	18	1.8529411764	1.8529411765	
*	16	2	19	1.8472222222	1.8472222223	
*	16	2	20	1.8421052631	1.8421052632	
*	16	2	21	1.8374999999	1.8375000000	
*	16	2	22	1.8333333333	1.8333333334	
*	16	2	23	1.8295454545	1.8295454546	
*	16	2	24	1.8260869565	1.8260869566	
*	16	2	25	1.8229166666	1.8229166667	
*	16	2	26	1.8199999999	1.8200000000	
*	16	2	27	1.8173076923	1.8173076924	
*	16	2	28	1.8148148148	1.8148148149	
*	16	2	29	1.8124999999	1.8125000000	
*	16	2	30	1.8103448275	1.8103448276	
*	16	2	31	1.8083333333	1.8083333334	
*	16	2	32	1.8064516129	1.8064516130	
*	16	2	33	1.8046874999	1.8046875000	
*	16	2	34	1.8030303030	1.8030303031	
*	16	2	35	1.8014705882	1.8014705883	
*	16	2	36	1.7999999999	1.8000000000	
*	16	2	37	1.7986111111	1.7986111112	
*	16	2	38	1.7972972972	1.7972972973	
*	16	2	39	1.7960526315	1.7960526316	
*	16	2	40	1.7948717948	1.7948717949	
*	16	2	41	1.7937499999	1.7937500000	

* 16	2	42	1.7926829268	1.7926829269		
* 16	2	43	1.7916666666	1.7916666667		
* 16	2	44	1.7906976744	1.7906976745		
* 16	2	45	1.7897727272	1.7897727273		
* 16	2	46	1.7888888888	1.7888888889		
* 16	2	47	1.7880434782	1.7880434783		
* 16	2	48	1.7872340425	1.7872340426		
	16	2	49	1.7864578165	1.7864583334	
	16	2	50	1.7857113491	1.7857142858	
	16	2	64	1.7724763231	1.7777777778	
* 16	3	3	2.9999999999	3.0000000000	tight bound	
* 16	3	4	2.9999999999	3.0000000000	tight bound	
* 16	3	5	2.9999999999	3.0000000000	tight bound	
	16	3	6	2.9199999999	2.9250000000	
	16	3	7	2.8437499980	2.8437500000	unclear whether bound is tight
* 16	3	8	2.7857142857	2.7857142858		
* 16	3	9	2.7421874999	2.7421875000		
* 16	3	10	2.7083333333	2.7083333334		
* 16	3	11	2.6812499999	2.6812500000		
* 16	3	12	2.6590909090	2.6590909091		
* 16	3	13	2.6406249999	2.6406250000		
* 16	3	14	2.6249999999	2.6250000000		
* 16	3	15	2.6116071428	2.6116071429		
* 16	3	16	2.5999999999	2.6000000000		
* 16	3	17	2.5898437499	2.5898437500		
* 16	3	18	2.5808823529	2.5808823530		
* 16	3	19	2.5729166666	2.5729166667		
* 16	3	20	2.5657894736	2.5657894737		
* 16	3	21	2.5593749999	2.5593750000		
* 16	3	22	2.5535714285	2.5535714286		
* 16	3	23	2.5482954545	2.5482954546		
* 16	3	24	2.5434782608	2.5434782609		
* 16	3	25	2.5390624999	2.5390625000		
* 16	3	26	2.5349999999	2.5350000000		
* 16	3	27	2.5312499999	2.5312500000		
* 16	3	28	2.5277777777	2.5277777778		
* 16	3	29	2.5245535714	2.5245535715		
* 16	3	30	2.5215517241	2.5215517242		
* 16	3	31	2.5187499999	2.5187500000		
* 16	3	32	2.5161290322	2.5161290323		
* 16	3	33	2.5136718749	2.5136718750		
* 16	3	34	2.5113636363	2.5113636364		
* 16	3	35	2.5091911764	2.5091911765		
* 16	3	36	2.5071428571	2.5071428572		
* 16	3	37	2.5052083333	2.5052083334		
* 16	3	38	2.5033783783	2.5033783784		
* 16	3	39	2.5016447368	2.5016447369		
* 16	3	40	2.4999999999	2.5000000000		
* 16	3	41	2.4984374999	2.4984375000		
* 16	3	42	2.4969512195	2.4969512196		
* 16	3	43	2.4955357142	2.4955357143		

★ 16	3	44	2.4941860465	2.4941860466
★ 16	3	45	2.4928977272	2.4928977273
★ 16	3	46	2.4916666666	2.4916666667
★ 16	3	47	2.4904891304	2.4904891305
★ 16	3	48	2.4893617021	2.4893617022
★ 16	3	49	2.4882812499	2.4882812500
★ 16	3	50	2.4872448979	2.4872448980
★ 16	3	64	2.4761904761	2.4761904762
16	3	80	2.4667347824	2.4683544304

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