

1. Mathematical Constants

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¹ National Bureau of Standards.

TABLE 1. 1. MATHEMATICAL CONSTANTS

$n(\text{prime})$	$\sqrt[n]{n}$								
2	1.4142	13562	37309	50488	$10^{1/3}$	3.1622	77660	16837	93320
3	1.7320	50807	56887	72935	$10^{1/3}$	2.1544	34690	03188	37219
5	2.2360	67977	49978	96964	$10^{1/4}$	1.7782	79410	03892	28012
7	2.6457	51311	06459	05905	$10^{1/5}$	1.5848	93192	46111	34853
11	3.3166	24790	35539	98491	$100^{1/3}$	4.6415	88833	61277	88924
13	3.6055	51275	46398	92931	$100^{1/5}$	2.5118	86431	50958	01112
17	4.1231	05625	61766	05498	$1000^{1/4}$	5.6234	13251	90349	08040
19	4.3588	98943	54067	35522	$1000^{1/5}$	3.9810	71705	53497	25077
23	4.7958	31523	31271	95416	$2^{1/3}$	1.2599	21049	89487	31648
29	5.3851	64807	13450	40313	$3^{1/3}$	1.4422	49570	30740	83823
31	5.5677	64362	83002	19221	$2^{1/4}$	1.1892	07115	00272	10667
37	6.0827	62530	29821	96890	$3^{1/4}$	1.3160	74012	95249	24608
41	6.4031	24237	43284	86865	$2^{-1/2} \quad (-1)$	7.0710	67811	86547	52440
43	6.5574	38524	30200	06523	$3^{-1/2} \quad (-1)$	5.7735	02691	89625	76451
47	6.8556	54600	40104	41249	$5^{-1/2} \quad (-1)$	4.4721	35954	99957	93928
53	7.2801	09889	28051	82711					
59	7.6811	45747	86860	81758					
61	7.8102	49675	90665	43941	$e^{\pi/2}$	4.8104	77380	96535	16555
67	8.1853	52771	87244	99700	$e^{\pi/4}$	2.1932	80050	73801	54566
71	8.4261	49773	17635	86306	$e^{-\pi/2} \quad (-1)$	2.0787	95763	50761	90855
73	8.5440	03745	31753	11679	$e^{-\pi/4} \quad (-1)$	4.5593	81277	65996	23677
79	8.8881	94417	31558	88501	$e^{1/2}$	1.6487	21270	70012	81468
83	9.1104	33579	14429	88819	$e^{-1/2} \quad (-1)$	6.0653	06597	12633	42360
89	9.4339	81132	05660	38113	$e^{1/3}$	1.3956	12425	08608	95286
97	9.8488	57801	79610	47217	$e^{-1/3} \quad (-1)$	7.1653	13105	73789	25043
n	e^n				n	e^{-n}			
1	2.7182	81828	45904	52353 60287	1	(-1)	3.6787	94411 71442	32159 55238
2	7.3890	56098	93065	02272 30427	2	(-1)	1.3533	52832 36612	69189 39995
3	(1) 2.0085	53692	31876	67740 92853	3	(-2)	4.9787	06836 78639	42979 34242
4	(1) 5.4598	15003	31442	39078 11026	4	(-2)	1.8315	63888 87341	80293 71802
5	(2) 1.4841	31591	02576	60342 11156	5	(-3)	6.7379	46999 08546	70966 36048
6	(2) 4.0342	87934	92735	12260 83872	6	(-3)	2.4787	52176 66635	84230 45167
7	(3) 1.0966	33158	42845	85992 63720	7	(-4)	9.1188	19655 54516	20800 31361
8	(3) 2.9809	57987	04172	82747 43592	8	(-4)	3.3546	26279 02511	83882 13891
9	(3) 8.1030	83927	57538	40077 09997	9	(-4)	1.2340	98040 86679	54949 76367
10	(4) 2.2026	46579	48067	16516 95790	10	(-5)	4.5399	92976 24848	51535 59152
n	$e^{n\pi}$				n	$e^{-n\pi}$			
1	(1) 2.3140	69263	27792	69006	1	(-2)	4.3213	91826 37722	49774
2	(2) 5.3549	16555	24764	73650	2	(-3)	1.8674	42731 70798	88144
3	(4) 1.2391	64780	79166	97482	3	(-5)	8.0699	51757 03045	99239
4	(5) 2.8675	13131	36653	29975	4	(-6)	3.4873	42356 20899	54918
5	(6) 6.6356	23999	34113	42333	5	(-7)	1.5070	17275 39006	46107
6	(8) 1.5355	29353	95446	69392	6	(-9)	6.5124	12136 07990	07282
7	(9) 3.5533	21280	84704	43597	7	(-10)	2.8142	68457 48555	27211
8	(10) 8.2226	31558	55949	95275	8	(-11)	1.2161	55670 94093	08397
9	(12) 1.9027	73895	29216	12917	9	(-13)	5.2554	85176 00644	85552
10	(13) 4.4031	50586	06320	29011	10	(-14)	2.2711	01068 32409	38387
e^e	(1)	1.5154	26224	14792 64190	e^{-e}	(-2)	6.5988	03584 53125	37077
e^{γ}		1.7810	72417	99019 79852	$e^{-\gamma}$	(-1)	5.6145	94835 66885	16982
n	$\ln n$				n	$\log_{10} n$			
2	0.6931	47180	55994	53094 172321	2	(-1)	3.0102	99956 63981	19521 37389
3	1.0986	12288	66810	96913 952452	3	(-1)	4.7712	12547 19662	43729 50279
4	1.3862	94361	11989	06188 344642	4	(-1)	6.0205	99913 27962	39042 74778
5	1.6094	37912	43410	03746 007593	5	(-1)	6.9897	00043 36018	80478 62611
6	1.7917	59469	22805	50008 124774	6	(-1)	7.7815	12503 83643	63250 87668
7	1.9459	10149	05531	33051 053527	7	(-1)	8.4509	80400 14256	83071 22163
8	2.0794	41541	67983	59282 516964	8	(-1)	9.0308	99869 91943	58564 12167
9	2.1972	24577	33621	93827 904905	9	(-1)	9.5424	25094 39324	87459 00558
10	2.3025	85092	99404	56840 179915	10		1.0000	00000 00000	00000 00000
11	2.3978	95272	79837	05440 619436	11		1.0413	92685 15822	50407 50200
13	2.5649	49357	46153	67360 534874	13		1.1139	43352 30683	67692 06505
17	2.8332	13344	05621	60802 495346	17		1.2304	48921 37827	39285 40170
19	2.9444	38979	16644	04600 090274	19		1.2787	53600 95282	89615 36333
23	3.1354	94215	92914	96908 067528	23		1.3617	27836 01759	28788 67777
29	3.3672	95829	98647	40271 832720	29		1.4623	97997 98985	60873 32847
31	3.4339	87204	48514	62459 291643	31		1.4913	61693 83427	26796 66704
37	3.6109	17912	64422	44443 680957	37		1.5682	01724 06699	49968 08451
41	3.7135	72066	70430	78038 667634	41		1.6127	83856 71973	54945 09412
43	3.7612	00115	69356	24234 728425	43		1.6334	68455 57958	65264 05088

*See page II.

TABLE 1.1. MATHEMATICAL CONSTANTS—Continued

n	$\ln n$					n	$\log_{10} n$					
47	3.8501	47601	71005	85868	209507	47	1.6720	97857	93571	74644	14219	
53	3.9702	91913	55212	18341	444691	53	1.7242	75869	60078	90456	32992	
59	4.0775	37443	90571	94506	160504	59	1.7708	52011	64214	41902	60656	
61	4.1108	73864	17331	12487	513891	61	1.7853	29835	01076	70338	85749	
67	4.2046	92619	39096	60596	700720	67	1.8260	74802	70082	64341	49132	
71	4.2626	79877	04131	54213	294545	71	1.8512	58348	71907	52860	92829	
73	4.2904	59441	14839	11290	921089	73	1.8633	22860	12045	59010	74387	
79	4.3694	47852	46702	14941	729455	79	1.8976	27091	29044	14279	94821	
83	4.4188	40607	79659	79234	754722	83	1.9190	78092	37607	39038	32760	
89	4.4886	36369	73213	98383	178155	89	1.9493	90006	64491	27847	23543	
97	4.5747	10978	50338	28221	167216	97	1.9867	71734	26624	48517	84362	
$\ln \pi$	1.1447	29885	84940	01741	43427	$\log_{10} \pi$	(-1)	4.9714	98726	94133	85435	12683
$\ln \sqrt{2\pi}$	(-1) 9.1893	85332	04672	74178	03296	$\log_{10} e$	(-1)	4.3429	44819	03251	82765	11289
n	$n \ln 10$					n	$n\pi$					
1	2.3025	85092	99404	56840	17991	1	3.1415	92653	58979	32384	62643	
2	4.6051	70185	98809	13680	35983	2	6.2831	85307	17958	64769	25287	
3	6.9077	55278	98213	70520	53974	3	9.4247	77960	76937	97153	87930	
4	9.2103	40371	97618	27360	71966	4	(1) 1.2566	37061	43591	72953	85057	
5	(1) 1.1512	92546	49702	28420	08996	5	(1) 1.5707	96326	79489	66192	31322	
6	(1) 1.3815	51055	79642	74104	10795	6	(1) 1.8849	55592	15387	59430	77586	
7	(1) 1.6118	09565	09583	19788	12594	7	(1) 2.1991	14857	51285	52669	23850	
8	(1) 1.8420	68074	39523	65472	14393	8	(1) 2.5132	74122	87183	45907	70115	
9	(1) 2.0723	26583	69464	11156	16192	9	(1) 2.8274	33388	23081	39146	16379	
n	π^n					n	π^{-n}					
1	3.1415	92653	58979	32384	62643	1	(-1) 3.1830	98861	83790	67153	77675	
2	9.8696	04401	08935	86188	34491	2	(-1) 1.0132	11836	42337	77144	38795	
3	(1) 3.1006	27668	02998	20175	47632	3	(-2) 3.2251	53443	31994	89184	42205	
4	(1) 9.7409	09103	40024	37236	44033	4	(-2) 1.0265	98225	46843	35189	15278	
5	(2) 3.0601	96847	85281	45326	27413	5	(-3) 3.2677	63643	05338	54726	28250	
6	(2) 9.6138	91935	75304	43703	02194	6	(-3) 1.0401	61473	29585	22960	89838	
7	(3) 3.0202	93227	77679	20675	14206	7	(-4) 3.1039	36801	77566	76432	59528	
8	(3) 9.4885	31016	07057	40071	28576	8	(-4) 1.0539	03916	53493	66633	17287	
9	(4) 2.9809	09933	34462	11666	50940	9	(-5) 3.3546	80357	20886	91287	39854	
10	(4) 9.3648	04747	60830	20973	71669	10	(-5) 1.0678	27922	68615	33662	04078	
$\pi/2$	1.5707	96326	79489	66192	31322	$3\pi/2$	4.7123	88980	38468	98576	93965	
$\pi/3$	1.0471	97551	19659	77461	54214	$4\pi/3$	4.1887	90204	78639	09846	16858	
$\pi/4$	(-1) 7.8539	81633	97448	30961	56608	$\pi(2)^{1/2}$	4.4428	82938	15836	62470	15881	
$\pi^{1/2}$	1.7724	53850	90551	60272	98167	$\pi^{-1/2}$	(-1) 5.6418	95835	47756	28694	80795	
$\pi^{1/3}$	1.4645	91887	56152	32630	20143	$\pi^{-1/3}$	(-1) 6.8278	40632	55295	68146	70208	
$\pi^{1/4}$	1.3313	35363	80038	97127	97535	$\pi^{-1/4}$	(-1) 7.5112	55444	64942	48285	87030	
$\pi^{2/3}$	2.1450	29397	11102	56000	77444	$\pi^{-2/3}$	(-1) 4.6619	40770	35411	61438	19885	
$\pi^{3/4}$	2.3597	30492	41469	68875	78474	$\pi^{-3/4}$	(-1) 4.2377	72081	23757	59679	10077	
$\pi^{3/2}$	5.5683	27996	83170	78452	84818	$\pi^{-3/2}$	(-1) 1.7958	71221	25166	56168	90820	
π^e	2.2459	15771	83610	45473	42715	π^{-e}	(-2) 4.4525	26726	69229	06151	35273	
$(2\pi)^{1/2}$	2.5066	28274	63100	05024	15765	$(2\pi)^{-1/2}$	(-1) 3.9894	22804	01432	67793	99461	
$(\pi/2)^{1/2}$	1.2533	14137	31550	02512	07883	$(2/\pi)^{1/2}$	(-1) 7.9788	45608	02865	35587	98921	
$\pi(2)^{-1/2}$	2.2214	41469	07918	31235	07940	$2^{1/2}/\pi$	(-1) 4.5015	81580	78553	03477	75996	
$1r$	57.2957	79513	08232	08767	98155°	$1'$	0.0002	90888	20866	57215	96154r	
1°	0.0174	53292	51994	32957	69237r	$1''$	0.0000	04848	13681	10953	59936r	
γ	0.5772	15664	90153	28606	06512	$\ln \gamma$	-0.5495	39312	98164	48223	37662	
$\Gamma(1/2)$	1.7724	53850	905516			$1/\Gamma(1/2)$	0.5641	89583	547756			
$\Gamma(1/3)$	2.6789	38534	707748			$1/\Gamma(1/3)$	0.3732	82173	907395			
$\Gamma(2/3)$	1.3541	17939	426400			$1/\Gamma(2/3)$	0.7384	88111	621648			
$\Gamma(1/4)$	3.6256	09908	221908			$1/\Gamma(1/4)$	0.2758	15662	830209			
$\Gamma(3/4)$	1.2254	16702	465178			$1/\Gamma(3/4)$	0.8160	48939	098263			
$\Gamma(4/3)$	0.8929	79511	569249			$1/\Gamma(4/3)$	1.1198	46521	722186			
$\Gamma(5/3)$	0.9027	45292	950934			$1/\Gamma(5/3)$	1.1077	32167	432472			
$\Gamma(5/4)$	0.9064	02477	055477			$1/\Gamma(5/4)$	1.1032	62651	320837			
$\Gamma(7/4)$	0.9190	62526	848883			$1/\Gamma(7/4)$	1.0880	65252	131017			
$\ln \Gamma(1/3)$	0.9854	20646	927767			$\ln \Gamma(4/3)$	-0.1131	91641	740343			
$\ln \Gamma(2/3)$	0.3031	50275	147523			$\ln \Gamma(5/3)$	-0.1023	14832	960640			
$\ln \Gamma(1/4)$	1.2880	22524	698077			$\ln \Gamma(5/4)$	-0.0982	71836	421813			
$\ln \Gamma(3/4)$	0.2032	80951	431296			$\ln \Gamma(7/4)$	-0.0844	01121	020486			