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List of numbers

This is a list of articles about numbers (*not* about numerals).

Contents

Rational numbers

A rational number is any number that can be expressed as the quotient or fraction p/q of two integers, a numerator p and a non-zero denominator q.[1] Since q may be equal to 1, every integer is a rational number. The set of all rational numbers, often referred to as "the rationals", the field of rationals or the field of rational numbers is usually denoted by a boldface $\mathbf{Q}$ (or blackboard bold $\mathbb{Q}$, Unicode ℚ);[2] it was thus denoted in 1895 by Giuseppe Peano after *quoziente*, Italian for "quotient".

Natural numbers

Natural numbers are those used for counting (as in "there are *six* (6) coins on the table") and ordering (as in "this is the *third* (3rd) largest city in the country"). In common language, words used for counting are "cardinal numbers" and words used for ordering are "ordinal numbers". There are infinitely many natural numbers.

[show]

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109
110	111	112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127	128	129
130	131	132	133	134	135	136	137	138	139
140	141	142	143	144	145	146	147	148	149
150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169
170	171	172	173	174	175	176	177	178	179
180	181	182	183	184	185	186	187	188	189
190	191	192	193	194	195	196	197	198	199
200	201	202	203	204	205	206	207	208	209
210	211	212	213	214	215	216	217	218	219
220	221	222	223	224	225	226	227	228	229
230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249
250	251	252	253	254	255	256	257	258	259
						260	270	280	290
			300	400	500	600	700	800	900
	1000	2000	3000	4000	5000	6000	7000	8000	9000
	10000	20000	30000	40000	50000	60000	70000	80000	90000
					10^5	10^6	10^7	10^8	10^9
				10^{10}	10^{100}	$10^{10^{100}}$	Larger numbers		

(Note that the status of 0 is ambiguous. In set theory and computer science, 0 is considered a natural number. In number theory, it usually is not.)

Powers of ten (scientific notation)

A power of ten 18 is a number 10^k, where k is an integer. For instance, with $k = 0, 1, 2, 3, ...$, the appropriate powers of ten are 1, 10, 100, 1000, ... Powers of ten can also be fractional: for instance, $k = -3$ gives 1/1000, or 0.001.

In scientific notation, real numbers are written in the form $m \times 10^n$. The number 394,000 is written in this form as 3.94×10^5.

Integers

Notable integers

Integers that are notable for their mathematical properties or cultural meanings include:

- −40, the equal point in the Fahrenheit and Celsius scales.
- −1, the additive inverse of unity
- 0, the additive identity.
- 1, the multiplicative identity Also the only natural number (not including 0) that isn't prime or composite.
- 2, the base of the binary number system, used in almost all modern computers and information systems. Also notable as the only even prime number.
- 3, significant in Christianity as the Trinity. Also considered significant in Hinduism (Trimurti, Tridevi). Holds significance in a number of ancient mythologies.
- 4, the first composite number, also considered an "unlucky number" in modern China due to its audible similarity to the word "Death."
- 6, the first of the series of perfect numbers, whose proper factors sum to the number itself.
- 7, considered a "lucky" number in Western cultures.
- 8, considered a "lucky" number in Chinese culture.
- 9, the first odd number that is composite.
- 10, the number base for most modern counting systems.
- 12, the number base for some ancient counting systems and the basis for some modern measuring systems. Known as a dozen.
- 13, considered an "unlucky" number in Western superstition. Also known as a "Baker's Dozen".
- 20, known as a score.
- 28, the second perfect number.
- 42, the "answer to the ultimate question of life, the universe, and everything" in the popular science fiction work *The Hitchhiker's Guide to the Galaxy*
- 60, the number base for some ancient counting systems, such as the Babylonians', and the basis for many modern measuring systems.
- 69, used as slang to refer to a sexual act.
- 86, a slang term that is used in the American popular culture as a transitive verb to mean throw out or get rid of.[3]
- 108, considered sacred by the Dharmic Religions. Approximately equal to the ratio of the distance from Earth to Sun and diameter of the Sun.
- 144, a dozen times dozen, known as a gross.
- 255, $2^8 - 1$, a Mersenne number and the smallest perfect totient number that is neither a power of three nor thrice a prime; it is also the largest number that can be represented using an 8-bit unsigned integer.
- 420, a code-term that refers to the consumption of cannabis.
- 496, the third perfect number.
- 666, the Number of the Beast from the Book of Revelation.
- 786, regarded as sacred in the Muslim Abjad numerology.
- 1729, the Hardy–Ramanujan number, also known as the second taxicab number; that is, the smallest positive integer that can be written as the sum of two positive cubes in two different ways.[4]
- 5040, mentioned by Plato in the *Laws* as one of the most important numbers for the city. It is also the largest factorial (7! = 5040) that is also a highly composite number.
- 8128, the fourth perfect number
- 65535, $2^{16} - 1$, the maximum value of a 16-bit unsigned integer.
- 65537, $2^{16} + 1$, the most popular RSA public key prime exponent in most SSL/TLS certificates on the Web/Internet.
- 142857, the smallest base 10 cyclic number.

- 2147483647, $2^{31} - 1$, the maximum value of a 32-bit signed integer using two's complement representation.
- 9814072356, the largest perfect power that contains no repeated digits in base ten.
- 9223372036854775807, $2^{63} - 1$, the maximum value of a 64-bit signed integer using two's complement representation.

Named numbers

- Googol (10^{100}) and googolplex ($10^{(10^{100})}$) and googolplexian ($10^{(10^{(10^{100})})}$) or 1 followed by a googolplex of zeros.
- Graham's number
- Moser's number
- Shannon number
- Hardy–Ramanujan number (1729)
- Skewes' number
- Avogadro's number
- Kaprekar's constant (6174)

Prime numbers

A prime number is a positive integer which has exactly two divisors: 1 and itself.

The first 100 prime numbers are:

[show]

2	3	5	7	11	13	17	19	23	29
31	37	41	43	47	53	59	61	67	71
73	79	83	89	97	101	103	107	109	113
127	131	137	139	149	151	157	163	167	173
179	181	191	193	197	199	211	223	227	229
233	239	241	251	257	263	269	271	277	281
283	293	307	311	313	317	331	337	347	349
353	359	367	373	379	383	389	397	401	409
419	421	431	433	439	443	449	457	461	463
467	479	487	491	499	503	509	521	523	541

Highly composite numbers

A highly composite number (HCN) is a positive integer with more divisors than any smaller positive integer. They are often used in geometry, grouping and time measurement.

The first 20 highly composite numbers are:

1, 2, 4, 6, 12, 24, 36, 48, 60, 120, 180, 240, 360, 720, 840, 1260, 1680, 2520, 5040, 7560.

Perfect numbers

A perfect number is an integer that is the sum of its positive proper divisors (all divisors except itself).

The first 10 perfect numbers:

1	6
2	28
3	496
4	8 128
5	33 550 336
6	8 589 869 056
7	137 438 691 328
8	2 305 843 008 139 952 128
9	2 658 455 991 569 831 744 654 692 615 953 842 176
10	191 561 942 608 236 107 294 793 378 084 303 638 130 997 321 548 169 216

Cardinal numbers

In the following tables, [and] indicates that the word *and* is used in some dialects (such as British English), and omitted in other dialects (such as American English).

Small numbers

This table demonstrates the standard English construction of small cardinal numbers up to one hundred million—names for which all variants of English agree.

Value	Name	Alternate names, and names for sets of the given size
0	Zero	aught, cipher, cypher, donut, dot, duck, goose egg, love, nada, naught, nil, none, nought, nowt, null, ought, oh, squat, zed, zilch, zip, zippo, Sunya (Sanskrit)
1	One	ace, individual, single, singleton, unary, unit, unity, Pratham (Sanskrit)
2	Two	binary, brace, couple, couplet, distich, deuce, double, doubleton, duad, duality, duet, duo, dyad, pair, span, twain, twin, twosome, yoke
3	Three	deuce-ace, leash, set, tercet, ternary, ternion, terzetto, threesome, tierce, trey, triad, trine, trinity, trio, triplet, troika, hat-trick
4	Four	foursome, quadruplet, quatern, quaternary, quaternity, quartet, tetrad
5	Five	cinque, fin, fivesome, pentad, quint, quintet, quintuplet
6	Six	half dozen, hexad, sestet, sextet, sextuplet, sise
7	Seven	heptad, septet, septuple, walking stick
8	Eight	octad, octave, octet, octonary, octuplet, ogdoad
9	Nine	ennead
10	Ten	deca, decade, das (India)
11	Eleven	onze, ounze, ounce, banker's dozen
12	Twelve	dozen
13	Thirteen	baker's dozen, long dozen[5]
14	Fourteen	
15	Fifteen	
16	Sixteen	
17	Seventeen	
18	Eighteen	
19	Nineteen	
20	Twenty	score,
21	Twenty-one	long score[5]
22	Twenty-two	Deuce-deuce
23	Twenty-three	
24	Twenty-four	two dozen
25	Twenty-five	
26	Twenty-six	
27	Twenty-seven	
28	Twenty-eight	
29	Twenty-nine	
30	Thirty	
31	Thirty-one	
32	Thirty-two	
40	Forty	two-score
50	Fifty	half-century
60	Sixty	three-score

70	Seventy	three-score and ten
80	Eighty	four-score
87	Eighty-seven	four-score and seven
90	Ninety	four-score and ten
100	One hundred	centred, century, ton, short hundred
101	One hundred [and] one	
110	One hundred [and] ten	
111	One hundred [and] eleven	eleventy-one[6]
120	One hundred [and] twenty	long hundred,[5] great hundred, *(obsolete)* hundred
121	One hundred [and] twenty-one	
144	One hundred [and] forty-four	gross, dozen dozen, small gross
200	Two hundred	
300	Three hundred	
400	Four hundred	
500	Five hundred	
600	Six hundred	
666	Six hundred [and] sixty-six	
700	Seven hundred	
777	Seven hundred [and] seventy-seven	
800	Eight hundred	
900	Nine hundred	
1 000	One thousand	chiliad, grand, G, thou, yard, kilo, k, millennium, Hajaar (India)
1 001	One thousand [and] one	
1 010	One thousand [and] ten	
1 011	One thousand [and] eleven	
1 024	One thousand [and] twenty-four	kibi or kilo in computing, see binary prefix (kilo is shortened to K, Kibi to Ki)
1 100	One thousand one hundred	Eleven hundred
1 101	One thousand one hundred [and] one	
1 728	One thousand seven hundred [and] twenty-eight	great gross, long gross, dozen gross
2 000	Two thousand	
3 000	Three thousand	
10 000	Ten thousand	myriad, wan (China)
100 000	One hundred thousand	lakh
500 000	Five hundred thousand	crore (Iranian)
1 000 000	One million	Mega, meg, mil, (often shortened to M)
1 048 576	One million forty-eight thousand five hundred	Mibi or Mega in computing, see binary prefix (Mega is shortened to M, Mibi to Mi)

	[and] seventy-six	
10 000 000	Ten million	crore (Indian)(Pakistan)
100 000 000	One hundred million	yi (China)

English names for powers of 10

This table compares the English names of cardinal numbers according to various American, British, and Continental European conventions. See English numerals or names of large numbers for more information on naming numbers.

	Short scale	Long scale		Power	
Value	American	British (Nicolas Chuquet)	Continental European (Jacques Peletier du Mans)	of a thousand	of a million
10^{0}	One			1000^{-1+1}	1000000^{0}
10^{1}	Ten				
10^{2}	Hundred				
10^{3}	Thousand			1000^{0+1}	$1000000^{0.5}$
10^{6}	Million			1000^{1+1}	1000000^{1}
10^{9}	Billion	Thousand million	Milliard	1000^{2+1}	$1000000^{1.5}$
10^{12}	Trillion	Billion		1000^{3+1}	1000000^{2}
10^{15}	Quadrillion	Thousand billion	Billiard	1000^{4+1}	$1000000^{2.5}$
10^{18}	Quintillion	Trillion		1000^{5+1}	1000000^{3}
10^{21}	Sextillion	Thousand trillion	Trilliard	1000^{6+1}	$1000000^{3.5}$
10^{24}	Septillion	Quadrillion		1000^{7+1}	1000000^{4}
10^{27}	Octillion	Thousand quadrillion	Quadrilliard	1000^{8+1}	$1000000^{4.5}$
10^{30}	Nonillion	Quintillion		1000^{9+1}	1000000^{5}
10^{33}	Decillion	Thousand quintillion	Quintilliard	1000^{10+1}	$1000000^{5.5}$
10^{36}	Undecillion	Sextillion		1000^{11+1}	1000000^{6}
10^{39}	Duodecillion	Thousand sextillion	Sextilliard	1000^{12+1}	$1000000^{6.5}$
10^{42}	Tredecillion	Septillion		1000^{13+1}	1000000^{7}
10^{45}	Quattuordecillion	Thousand septillion	Septilliard	1000^{14+1}	$1000000^{7.5}$
10^{48}	Quindecillion	Octillion		1000^{15+1}	1000000^{8}
10^{51}	Sexdecillion	Thousand octillion	Octilliard	1000^{16+1}	$1000000^{8.5}$
10^{54}	Septendecillion	Nonillion		1000^{17+1}	1000000^{9}
10^{57}	Octodecillion	Thousand nonillion	Nonilliard	1000^{18+1}	$1000000^{9.5}$
10^{60}	Novemdecillion	Decillion		1000^{19+1}	1000000^{10}
10^{63}	Vigintillion	Thousand decillion	Decilliard	1000^{20+1}	$1000000^{10.5}$
10^{66}	Unvigintillion	Undecillion		1000^{21+1}	1000000^{11}
10^{69}	Duovigintillion	Thousand undecillion	Undecilliard	1000^{22+1}	$1000000^{11.5}$
10^{72}	Trevigintillion	Duodecillion		1000^{23+1}	1000000^{12}
10^{75}	Quattuorvigintillion	Thousand duodecillion	Duodecilliard	1000^{24+1}	$1000000^{12.5}$
10^{78}	Quinvigintillion	Tredecillion		1000^{25+1}	1000000^{13}
10^{81}	Sexvigintillion	Thousand tredecillion	Tredecilliard	1000^{26+1}	$1000000^{13.5}$
10^{84}	Septenvigintillion	Quattuordecillion		1000^{27+1}	1000000^{14}
10^{87}	Octovigintillion	Thousand quattuordecillion	Quattuordecilliard	1000^{28+1}	$1000000^{14.5}$
10^{90}	Novemvigintillion	Quindecillion		1000^{29+1}	1000000^{15}

10^{93}	Trigintillion	Thousand quindecillion	Quindecilliard	1000^{30+1}	$1000000^{15.5}$
10^{96}	Untrigintillion	Sexdecillion		1000^{31+1}	1000000^{16}
10^{99}	Duotrigintillion	Thousand sexdecillion	Sexdecilliard	1000^{32+1}	$1000000^{16.5}$
...	...	...		...	...
10^{120}	Novemtrigintillion	Vigintillion		1000^{39+1}	1000000^{20}
10^{123}	Quadragintillion	Thousand vigintillion	Vigintilliard	1000^{40+1}	$1000000^{20.5}$
...	...	...		...	...
10^{153}	Quinquagintillion	Thousand quinvigintillion	Quinvigintilliard	1000^{50+1}	$1000000^{25.5}$
...	...	...		...	...
10^{180}	Novemquinquagintillion	Trigintillion		1000^{59+1}	1000000^{30}
10^{183}	Sexagintillion	Thousand trigintillion	Trigintilliard	1000^{60+1}	$1000000^{30.5}$
...	...	...		...	...
10^{213}	Septuagintillion	Thousand quintrigintillion	Quintrigintilliard	1000^{70+1}	$1000000^{35.5}$
...	...	...		...	...
10^{240}	Novemseptuagintillion	Quadragintillion		1000^{79+1}	1000000^{40}
10^{243}	Octogintillion	Thousand quadragintillion	Quadragintilliard	1000^{80+1}	$1000000^{40.5}$
...	...	...		...	...
10^{273}	Nonagintillion	Thousand quinquadragintillion	Quinquadragintilliard	1000^{90+1}	$1000000^{45.5}$
...	...	...		...	...
10^{300}	Novemnonagintillion	Quinquagintillion		1000^{99+1}	1000000^{50}
10^{303}	Centillion	Thousand quinquagintillion	Quinquagintilliard	1000^{100+1}	$1000000^{50.5}$
...	...	...		...	...
10^{360}	Cennovemdecillion	Sexagintillion		1000^{119+1}	1000000^{60}
10^{420}	Cennovemtrigintillion	Septuagintillion		1000^{139+1}	1000000^{70}
10^{480}	Cennovemquinquagintillion	Octogintillion		1000^{159+1}	1000000^{80}
10^{540}	Cennovemseptuagintillion	Nonagintillion		1000^{179+1}	1000000^{90}
10^{600}	Cennovemnonagintillion	Centillion		1000^{199+1}	1000000^{100}
10^{603}	Ducentillion	Thousand centillion	Centilliard	1000^{200+1}	$1000000^{100.5}$

There is no consistent and widely accepted way to extend cardinals beyond centillion (centilliard).

SI prefixes for powers of 10

Value	1000^m	SI prefix	Name	Binary prefix	$1024^m = 2^{10m}$	Value
1 000	1000^1	k	Kilo	Ki	1024^1	1 024
1 000 000	1000^2	M	Mega	Mi	1024^2	1 048 576
1 000 000 000	1000^3	G	Giga	Gi	1024^3	1 073 741 824
1 000 000 000 000	1000^4	T	Tera	Ti	1024^4	1 099 511 627 776
1 000 000 000 000 000	1000^5	P	Peta	Pi	1024^5	1 125 899 906 842 624
1 000 000 000 000 000 000	1000^6	E	Exa	Ei	1024^6	1 152 921 504 606 846 976
1 000 000 000 000 000 000 000	1000^7	Z	Zetta	Zi	1024^7	1 180 591 620 717 411 303 424
1 000 000 000 000 000 000 000 000	1000^8	Y	Yotta	Yi	1024^8	1 208 925 819 614 629 174 706 176

Fractional numbers

This is a table of English names for non-negative rational numbers less than or equal to 1. It also lists alternative names, but there is no widespread convention for the names of extremely small positive numbers.

Keep in mind that rational numbers like 0.12 can be represented in infinitely many ways, e.g. *zero-point-one-two* (0.12), *twelve percent* (12%), *three twenty-fifths* ($\frac{3}{25}$), *nine seventy-fifths* ($\frac{9}{75}$), *six fiftieths* ($\frac{6}{50}$), *twelve hundredths* ($\frac{12}{100}$), *twenty-four two-hundredths* ($\frac{24}{200}$), etc.

Value	Fraction	Common names	Alternative names
1	$\frac{1}{1}$	One	0.999..., Unity
0.9	$\frac{9}{10}$	Nine tenths, [zero] point nine	
0.8	$\frac{4}{5}$	Four fifths, eight tenths, [zero] point eight	
0.7	$\frac{7}{10}$	Seven tenths, [zero] point seven	
0.6	$\frac{3}{5}$	Three fifths, six tenths, [zero] point six	
0.5	$\frac{1}{2}$	One half, five tenths, [zero] point five	
0.4	$\frac{2}{5}$	Two fifths, four tenths, [zero] point four	
0.333 333...	$\frac{1}{3}$	One third	
0.3	$\frac{3}{10}$	Three tenths, [zero] point three	
0.25	$\frac{1}{4}$	One quarter, one fourth, twenty-five hundredths, [zero] point two five	
0.2	$\frac{1}{5}$	One fifth, two tenths, [zero] point two	
0.166 666...	$\frac{1}{6}$	One sixth	
0.142 857 142 857...	$\frac{1}{7}$	One seventh	
0.125	$\frac{1}{8}$	One eighth, one-hundred-[and-]twenty-five thousandths, [zero] point one two five	
0.111 111...	$\frac{1}{9}$	One ninth	
0.1	$\frac{1}{10}$	One tenth, [zero] point one	One perdecime, one perdime
0.090 909...	$\frac{1}{11}$	One eleventh	
0.09	$\frac{9}{100}$	Nine hundredths, [zero] point zero nine	
0.083 333...	$\frac{1}{12}$	One twelfth	
0.08	$\frac{2}{25}$	Two twenty-fifths, eight hundredths, [zero] point zero eight	
0.0625	$\frac{1}{16}$	One sixteenth, six-hundred-[and-]twenty-five ten-thousandths, [zero] point zero six two five	
0.05	$\frac{1}{20}$	One twentieth, [zero] point zero five	
0.047 619 047 619...	$\frac{1}{21}$	One twenty-first	
0.045 454 545...	$\frac{1}{22}$	One twenty-second	
0.043 478 260 869 565 217 391 304 347...	$\frac{1}{23}$	One twenty-third	
0.041 666...	$\frac{1}{24}$	One twenty-fourth	

0.033 333...	$\frac{1}{30}$	One thirtieth	
0.03125	$\frac{1}{32}$	One thirty-second, thirty one-hundred [and] twenty five hundred-thousandths, [zero] point zero three one two five	
0.016 666...	$\frac{1}{60}$	One sixtieth	
0.015625	$\frac{1}{64}$	One sixty-fourth, ten thousand fifty six-hundred [and] twenty-five millionths, [zero] point zero one five six two five	
0.012 345 679 012 345 679...	$\frac{1}{81}$	One eighty-first	
0.01	$\frac{1}{100}$	One hundredth, [zero] point zero one	One percent
0.001	$\frac{1}{1000}$	One thousandth, [zero] point zero zero one	One permille
0.000 277 777...	$\frac{1}{3600}$	One thirty-six hundredth	
0.0001	$\frac{1}{10\,000}$	One ten-thousandth, [zero] point zero zero zero one	One myriadth, one permyria, one permyriad, one basis point
0.000 01	$\frac{1}{100\,000}$	One hundred-thousandth	One lakhth, one perlakh
0.000 001	$\frac{1}{1\,000\,000}$	One millionth	One ppm
0.000 000 1	$\frac{1}{10\,000\,000}$	One ten-millionth	One crorth, one percrore
0.000 000 01	$\frac{1}{100\,000\,000}$	One hundred-millionth	
0.000 000 001	$\frac{1}{1\,000\,000\,000}$	One billionth (in some dialects)	One ppb
0	$\frac{0}{1}$	Zero	Nil

Irrational and suspected irrational numbers

Algebraic numbers

Expression	Approximate value	Notes
$\frac{\sqrt{3}}{4}$	0.433 012 701 892 219 323 381 861 585 376	Area of an equilateral triangle with side length 1.
$\frac{\sqrt{5}-1}{2}$	0.618 033 988 749 894 848 204 586 834 366	Golden ratio conjugate Φ, reciprocal of and one less than the golden ratio.
$\frac{\sqrt{3}}{2}$	0.866 025 403 784 438 646 763 723 170 753	Height of an equilateral triangle with side length 1.
$\sqrt[12]{2}$	1.059 463 094 359 295 264 561 825 294 946	Twelfth root of two. Proportion between the frequencies of adjacent semitones in the equal temperament scale.
$\frac{3\sqrt{2}}{4}$	1.060 660 171 779 821 286 601 266 543 157	The size of the cube that satisfies Prince Rupert's cube.
$\sqrt[3]{2}$	1.259 921 049 894 873 164 767 210 607 278	Cube root of two. Length of the edge of a cube with volume two. See doubling the cube for the significance of this number.
—	1.303 577 269 034 296 391 257 099 112 153	Conway's constant, defined as the unique positive real root of a certain polynomial of degree 71.
$\sqrt[3]{\frac{1}{2}+\frac{1}{6}\sqrt{\frac{23}{3}}}+\sqrt[3]{\frac{1}{2}-\frac{1}{6}\sqrt{\frac{23}{3}}}$	1.324 717 957 244 746 025 960 908 854 478	Plastic number, the unique real root of the cubic equation $x^3 = x + 1$.
$\sqrt{2}$	1.414 213 562 373 095 048 801 688 724 210	$\sqrt{2} = 2 \sin 45° = 2 \cos 45°$ Square root of two a.k.a. Pythagoras' constant. Ratio of diagonal to side length in a square. Proportion between the sides of paper sizes in the ISO 216 series (originally DIN 476 series).
$\frac{1}{3}+\frac{2}{3\sqrt[3]{116+12\sqrt{93}}}+\frac{1}{6}\sqrt[3]{116+12\sqrt{93}}$	1.465 571 231 876 768 026 656 731 225 220	The limit to the ratio between subsequent numbers in the binary Look-and-say sequence.
$\frac{\sqrt{5+2\sqrt{5}}}{2}$	1.538 841 768 587 626 701 285 145 288 018	Altitude of a regular pentagon with side length 1.
$\frac{\sqrt{17}-1}{2}$	1.561 552 812 808 830 274 910 704 927 987	The Triangular root of 2.

$\frac{\sqrt{5}+1}{2}$	1.618 033 988 749 894 848 204 586 834 366	Golden ratio (φ), the larger of the two real roots of $x^2 = x + 1$.
$\frac{5}{4\sqrt{5-2\sqrt{5}}}$	1.720 477 400 588 966 922 759 011 977 389	Area of a regular pentagon with side length 1.
$\sqrt{3}$	1.732 050 807 568 877 293 527 446 341 506	$\sqrt{3}$ = 2 sin 60° = 2 cos 30° Square root of three a.k.a. *the measure of the fish*. Length of the space diagonal of a cube with edge length 1. Length of the diagonal of a 1 × $\sqrt{2}$ rectangle. Altitude of an equilateral triangle with side length 2. Altitude of a regular hexagon with side length 1 and diagonal length 2.
$\frac{1+\sqrt[3]{19+3\sqrt{33}}+\sqrt[3]{19-3\sqrt{33}}}{3}$	1.839 286 755 214 161 132 551 852 564 653	The Tribonacci constant. Appears in the volume and coordinates of the snub cube and some related polyhedra. It satisfies the equation $x + x^{-3} = 2$.
$\sqrt{5}$	2.236 067 977 499 789 696 409 173 668 731	Square root of five. Length of the diagonal of a 1 × 2 rectangle. Length of the diagonal of a $\sqrt{2}$ × $\sqrt{3}$ rectangle. Length of the space diagonal of a 1 × $\sqrt{2}$ × $\sqrt{2}$ rectangular box.
$\sqrt{2}+1$	2.414 213 562 373 095 048 801 688 724 210	Silver ratio (δ_S), the larger of the two real roots of $x^2 = 2x + 1$. Altitude of a regular octagon with side length 1.
$\sqrt{6}$	2.449 489 742 783 178 098 197 284 074 706	$\sqrt{2}$ · $\sqrt{3}$ = area of a $\sqrt{2}$ × $\sqrt{3}$ rectangle. Length of the space diagonal of a 1 × 1 × 2 rectangular box. Length of the diagonal of a 1 × $\sqrt{5}$ rectangle. Length of the diagonal of a 2 × $\sqrt{2}$ rectangle. Length of the diagonal of a square with side length $\sqrt{3}$.
$\frac{3\sqrt{3}}{2}$	2.598 076 113 533 159 402 911 695 122 588	Area of a regular hexagon with side length 1.

$\sqrt{7}$	2.645 751 311 064 590 590 501 615 753 639	Length of the space diagonal of a $1 \times 2 \times \sqrt{2}$ rectangular box. Length of the diagonal of a $1 \times \sqrt{6}$ rectangle. Length of the diagonal of a $2 \times \sqrt{3}$ rectangle. Length of the diagonal of a $\sqrt{2} \times \sqrt{5}$ rectangle.
$\sqrt{8}$	2.828 427 124 746 190 097 603 377 448 419	$2\sqrt{2}$ Volume of a cube with edge length $\sqrt{2}$. Length of the diagonal of a square with side length 2. Length of the diagonal of a $1 \times \sqrt{7}$ rectangle. Length of the diagonal of a $\sqrt{2} \times \sqrt{6}$ rectangle. Length of the diagonal of a $\sqrt{3} \times \sqrt{5}$ rectangle.
$\sqrt{10}$	3.162 277 660 168 379 331 998 893 544 433	$\sqrt{2} \cdot \sqrt{5}$ = area of a $\sqrt{2} \times \sqrt{5}$ rectangle. Length of the diagonal of a 1×3 rectangle. Length of the diagonal of a $2 \times \sqrt{6}$ rectangle. Length of the diagonal of a $\sqrt{3} \times \sqrt{7}$ rectangle. Length of the diagonal of a square with side length $\sqrt{5}$.
$\sqrt{11}$	3.316 624 790 355 399 849 114 932 736 671	Length of the space diagonal of a $1 \times 1 \times 3$ rectangular box. Length of the diagonal of a $1 \times \sqrt{10}$ rectangle. Length of the diagonal of a $2 \times \sqrt{7}$ rectangle. Length of the diagonal of a $3 \times \sqrt{2}$ rectangle. Length of the diagonal of a $\sqrt{3} \times \sqrt{8}$ rectangle. Length of the diagonal of a $\sqrt{5} \times \sqrt{6}$ rectangle.
$\sqrt{12}$	3.464 101 615 137 754 587 054 892 683 012	$2\sqrt{3}$ Length of the space diagonal of a cube with edge length 2. Length of the diagonal of a $1 \times \sqrt{11}$ rectangle. Length of the diagonal of a $2 \times \sqrt{8}$ rectangle. Length of the diagonal of a $3 \times \sqrt{3}$ rectangle. Length of the diagonal of a $\sqrt{2} \times \sqrt{10}$ rectangle.

		Length of the diagonal of a $\sqrt{5} \times \sqrt{7}$ rectangle. Length of the diagonal of a square with side length $\sqrt{6}$.

Transcendental numbers

- $(-1)^i = e^{-\pi}$ = 0.043 213 9183...
- Liouville constant c = 0.110 001 000 000 000 000 000 001 000...
- Champernowne constant C_{10} = 0.123 456 789 101 112 131 415 16...
- $i^i = \sqrt{e^{-\pi}}$ = 0.207 879 576...
- $\frac{1}{\pi}$ = 0.318 309 886 183 790 671 537 767 526 745 028 724 068 919 291 480...[7]
- $\frac{1}{e}$ = 0.367 879 441 171 442 321 595 523 770 161 460 867 445 811 131 031...[7]
- Prouhet–Thue–Morse constant τ = 0.412 454 033 640...
- $\log_{10} e$ = 0.434 294 481 903 251 827 651 128 918 916 605 082 294 397 005 803...[7]
- Omega constant Ω = 0.567 143 290 409 783 872 999 968 6622...
- Cahen's constant c = 0.643 410 546 29...
- ln 2: 0.693 147 180 559 945 309 417 232 121 458...
- $\frac{\pi}{\sqrt{18}}$ = 0.7404... the maximum density of sphere packing in three dimensional Euclidean space according to the Kepler conjecture[8]
- Gauss's constant G = 0.834 6268...
- $\frac{\pi}{\sqrt{12}}$ = 0.9068..., the fraction of the plane covered by the densest possible circle packing[9]
- $e^i + e^{-i}$ = 2 cos 1 = 1.080 604 61...
- $\frac{\pi^4}{90} = \zeta(4)$ = 1.082 323...[10]
- $\sqrt{2}_s$: 1.559 610 469...[11]
- $\log_2 3$: 1.584 962 501... (the logarithm of any positive integer to any integer base greater than 1 is either rational or transcendental)
- Gaussian integral $\sqrt{\pi}$ = 1.772 453 850 905 516...
- Komornik–Loreti constant q = 1.787 231 650...
- Universal parabolic constant P_2 = 2.295 587 149 39...
- Gelfond–Schneider constant $2^{\sqrt{2}}$ = 2.665 144 143...
- e = 2.718 281 828 459 045 235 360 287 471 353...
- π = 3.141 592 653 589 793 238 462 643 383 279...
- $\sqrt[i]{i} = \sqrt{e^{\pi}}$ = 4.810 477 381...
- Tau, or 2π: τ = 6.283 185 307 179 586..., The ratio of the circumference to a radius, and the number of radians in a complete circle[12][13]
- Gelfond's constant 23.140 692 632 779 25...
- Ramanujan's constant $e^{\pi\sqrt{163}}$ = 262 537 412 640 768 743.999 999 999 999 25...

Suspected transcendentals

These are irrational numbers that are thought to be, but have not yet been proved to be, transcendental.

- Z(1): −0.736 305 462 867 317 734 677 899 828 925 614 672...
- Heath-Brown–Moroz constant C = 0.001 317 641...
- Kepler–Bouwkamp constant 0.114 942 0448...
- MRB constant 0.187 859...
- Meissel–Mertens constant M = 0.261 497 212 847 642 783 755 426 838 608 695 859 0516...
- Bernstein's constant β = 0.280 169 4990...
- Strongly carefree constant 0.286 747...[14]

- Gauss–Kuzmin–Wirsing constant λ_1 = 0.303 663 0029...[15]
- Hafner–Sarnak–McCurley constant 0.353 236 3719...
- Artin's constant 0.373 955 8136...
- Prime constant ρ = 0.414 682 509 851 111 660 248 109 622...
- Carefree constant 0.428 249...[16]
- S(1): 0.438 259 147 390 354 766 076 756 696 625 152...
- F(1): 0.538 079 506 912 768 419 136 387 420 407 556...
- Stephens' constant 0.575 959...[17]
- Euler–Mascheroni constant γ = 0.577 215 664 901 532 860 606 512 090 082...
- Golomb–Dickman constant λ = 0.624 329 988 543 550 870 992 936 383 100 837 24...
- Twin prime constant C_2 = 0.660 161 815 846 869 573 927 812 110 014...
- Copeland–Erdős constant 0.235 711 131 719 232 931 374 143...
- Feller–Tornier constant 0.661 317...[18]
- Laplace limit ε = 0.662 743 4193...[1]
- Taniguchi's constant 0.678 234...[19]
- Continued Fraction Constant C = 0.697 774 657 964 007 982 006 790 592 551...[20]
- Embree–Trefethen constant β* = 0.702 58...
- Sarnak's constant 0.723 648...[21]
- Landau–Ramanujan constant 0.764 223 653 589 220 662 990 698 731 25...
- C(1): 0.779 893 400 376 822 829 474 206 413 65...
- $\frac{1}{\zeta(3)}$ = 0.831 907..., the probability that three random numbers have no common factor greater than 1.[8]
- Brun's constant for prime quadruplets B_2 = 0.870 588 3800...
- Quadratic class number constant 0.881 513...[22]
- Catalan's constant G = 0.915 965 594 177 219 015 054 603 514 932 384 110 774...
- Viswanath's constant σ(1) = 1.131 988 248 7943...
- Khinchin–Lévy constant 1.186 569 1104...[2]
- ζ(3) = 1.202 056 903 159 594 285 399 738 161 511 449 990 764 986 292..., also known as Apéry's constant, known to be irrational, but not known whether or not it is transcendental.[23]
- Vardi's constant E = 1.264 084 735 305...
- Glaisher–Kinkelin constant A = 1.282 427 12...
- Mills' constant A = 1.306 377 883 863 080 690 46...
- Totient summatory constant 1.339 784...[24]
- Ramanujan–Soldner constant μ = 1.451 369 234 883 381 050 283 968 485 892 027 449 493...
- Backhouse's constant 1.456 074 948...
- Favard constant K_1 = 1.570 796 33...
- Erdős–Borwein constant E = 1.606 695 152 415 291 763...
- Somos' quadratic recurrence constant σ = 1.661 687 949 633 594 121 296...
- Niven's constant c = 1.705 211...
- Brun's constant B_2 = 1.902 160 583 104...
- Landau's totient constant 1.943 596...[25]
- $\exp(-W_0(-\ln(\sqrt[3]{3})))$ = 2.478 052 680 288 30..., the smaller solution to $3^x = x^3$ and what, when put to the root of itself, is equal to 3 put to the root of itself.[26]
- Second Feigenbaum constant α = 2.5029...
- Sierpiński's constant K = 2.584 981 759 579 253 217 065 8936...
- Barban's constant 2.596 536...[27]
- Khinchin's constant K_0 = 2.685 452 001...[3]
- Fransén–Robinson constant F = 2.807 770 2420...
- Murata's constant 2.826 419...[28]
- Lévy's constant γ = 3.275 822 918 721 811 159 787 681 882...
- Reciprocal Fibonacci constant ψ = 3.359 885 666 243 177 553 172 011 302 918 927 179 688 905 133 731...
- Van der Pauw's constant $\frac{\pi}{\ln 2}$ = 4.532 360 141 827 193 809 62...[29]
- First Feigenbaum constant δ = 4.6692...

Numbers not known with high precision

- The constant in the Berry–Esseen Theorem $0.4097 < C < 0.4748$
- 2nd Landau's constant $0.4330 < B < 0.472$
- Bloch's constant $0.4332 < B < 0.4719$
- 1st Landau's constant $0.5 < L < 0.5433$
- 3rd Landau's constant $0.5 < A \leq 0.7853$
- Grothendieck constant $1.57 < k < 1.79$

Hypercomplex numbers

Hypercomplex number is a traditional term for an element of a unital algebra over the field of real numbers.

Algebraic complex numbers

- Imaginary unit $i = \sqrt{-1}$
- nth roots of unity: $(\xi_n)^k = \cos(2\pi \frac{k}{n}) + i \sin(2\pi \frac{k}{n})$, while $0 \leq k \leq n-1$, GCD$(k, n) = 1$

Other hypercomplex numbers

- The quaternions
- The octonions
- The sedenions
- The dual numbers (with an infinitesimal)

Transfinite numbers

Transfinite numbers are numbers that are "infinite" in the sense that they are larger than all finite numbers, yet not necessarily absolutely infinite.

- Aleph-null: $\aleph_0$: the smallest infinite cardinal, and the cardinality of $\mathbb{N}$, the set of natural numbers
- Aleph-one: $\aleph_1$: the cardinality of ω_1, the set of all countable ordinal numbers
- Beth-one: $\beth_1$ the cardinality of the continuum $2^{\aleph_0}$
- $\mathfrak{C}$ or $\mathfrak{c}$: the cardinality of the continuum $2^{\aleph_0}$
- omega: ω, the smallest infinite ordinal

Numbers representing measured quantities

Various terms have arisen to describe commonly used measured quantities.

- Pair: 2 (the base of the binary numeral system)
- Dozen: 12 (the base of the duodecimal numeral system)
- Baker's dozen: 13
- Score: 20 (the base of the vigesimal numeral system)
- Gross: 144 (= 12^2)
- Great gross: 1728 (= 12^3)

Numbers representing physical quantities

Physical quantities that appear in the universe are often described using physical constants.

- Avogadro constant $N_A = 6.022\,141\,7930 \times 10^{23}$ mol^{-1}

- Coulomb's constant k_e = 8.987 551 787 368 × 10^9 N·m^2/C^2 (m/F)
- Electronvolt eV = 1.602 176 487 40 × 10^{-19} J
- Electron relative atomic mass A_r(e) = 0.000 548 579 909 4323...
- Fine structure constant α = 0.007 297 352 537 650...
- Gravitational constant G = 6.673 84 × 10^{-11} N·$(m/kg)^2$
- Molar mass constant M_u = 0.001 kg/mol
- Planck constant h = 6.626 068 9633 × 10^{-34} J · s
- Rydberg constant R_∞ = 10 973 731.568 527 73 m^{-1}
- Speed of light in vacuum c = 299 792 458 m/s
- Stefan–Boltzmann constant σ = 5.670 400 × 10^{-8} W · m^{-2} · K^{-4}

Numbers without specific values

Many languages have words expressing indefinite and fictitious numbers—inexact terms of indefinite size, used forever comic effect, for exaggeration, as placeholder names, or when precision is unnecessary or undesirable. One technical term for such words is "non-numerical vague quantifier".[30] Such words designed to indicate large quantities can be called "indefinite hyperbolic numerals".[31]

See also

- English-language numerals
- Floating point
- Fraction (mathematics)
- Integer sequence
- Interesting number paradox
- Large numbers
- List of numbers in various languages
- List of prime numbers
- List of types of numbers
- Mathematical constant
- Names of large numbers
- Names of small numbers
- Negative number
- Number prefix
- Numeral (linguistics)
- Orders of magnitude (numbers)
- Ordinal number
- *The Penguin Dictionary of Curious and Interesting Numbers*
- Power of two
- Powers of 10
- SI prefix
- Small number
- Surreal number
- Table of prime factors

Notes

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2. Rouse, Margaret. "Mathematical Symbols" (http://searchdatacenter.techtarget.com/definition/Mathematical-Symbols). Retrieved 1 April 2015.
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8. "The Penguin Dictionary of Curious and Interesting Numbers" by David Wells, page 29.
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14. OEIS: A065473
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23. "The Penguin Dictionary of Curious and Interesting Numbers" by David Wells, page 33
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26. OEIS: A166928
27. OEIS: A175640
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Further reading

- *Kingdom of Infinite Number: A Field Guide* by Bryan Bunch, W.H. Freeman & Company, 2001. ISBN 0-7167-4447-3

External links

- The Database of Number Correlations: 1 to 2000+
- What's Special About This Number? A Zoology of Numbers: from 0 to 500
- Name of a Number

- See how to write big numbers
- About big numbers at the Library of Congress Web Archives (archived 2001-11-25)
- Robert P. Munafo's Large Numbers page
- Different notations for big numbers – by Susan Stepney
- Names for Large Numbers, in *How Many? A Dictionary of Units of Measurement* by Russ Rowlett
- What's Special About This Number? (from 0 to 9999)
