Mathematical Constants and Sequences

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This page is dedicated to my late math teacher **Jaroslav Bayer** who, back in 1955-8, kindled my passion for Mathematics.

This is a **constant-at-a-glance** list. You can also download a PDF version of this document for off-line use. But keep coming back, the list is growing!
When a value is followed by #t, it should be a proven transcendental number (but I only did my best to find out, which need not suffice).
Bold dots after a value are a link to the ••• OEIS ••• database.

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- Basic math constants
- Derived from the basic ones
  ... from 0 and 1
  ... from **i**
  ... from 1 and **i**
  ... from π
  ... from e
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- Enumerations on sets
- Enumerations on graphs
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  Trigonometric sin, ..., asin, ...
  Hyperbolic asinh, ..., asinh, ...
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  Exponential integral E1
  Exponential integral Ei
  Sine integral Si, Shi
  Cosine integral Ci
  Gamma Γ
  Polygamma ψ, ψ_n
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  Functions sinc(n,x)
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- Notes
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Basic mathematical constants

Zero, **One**, and **i**	0, 1, √(-1), respectively	Can anything be more basic than these two? (Oops, three!)
π, Archimedes' constant	3.141 592 653 589 793 238 462 643 ••• #t	Circumference of a disk with unit diameter.
e, Euler number, Napier's constant	2.718 281 828 459 045 235 360 287 ••• #t	Base of natural logarithms.
γ, Euler-Mascheroni constant	0.577 215 664 901 532 860 606 512 •••	$L_{n\to\infty}$ {(1+1/2+1/3+...1/n) - log(n)}
√2, Pythagora's constant	1.414 213 562 373 095 048 801 688 •••	Diagonal of a square with unit side.

Φ, Golden ratio	1.618 033 988 749 894 848 204 586 •••	Φ = (1+√5)/2 = 2.cos(π/5). Diagonal of a unit-side pentagon.
φ, **inverse golden ratio** 1/Φ = Φ -1 =(1-φ)/φ	0.618 033 988 749 894 848 204 586 •••	Also φ = (√5 - 1)/2 = √(2-√(2+√(2-√(2+ ...))))
δ_s, Silver ratio | Silver mean	2.414 213 562 373 095 048 801 688 •••	δ_s = 1+√2. One of the **silver means** (n+sqrt(n^2+1))/2
Plastic number ρ (or **silver constant**)	1.324 717 957 244 746 025 960 908 •••	Real root of $x^3 = x + 1$. Attractor of M(#)=$(1+\#)^{1/3}$.
Transfinite numbers, **infinity** cardinalities:		
$\text{Aleph}_0 \equiv \text{Beth}_0$, often denoted as ∞	$\aleph_0 \equiv \beth_0$	Cardinality of the set of natural numbers.
Beth_1, $\beth_1 \equiv \mathfrak{c}$, cardinality of continuum	$\mathfrak{c} = 2\text{^}\beth_0 > \beth_0$	Cardinality of the set of real numbers.
Beth_2, $\beth_2$	In general, $\beth_{k+1} = 2\text{^}\beth_k > \beth_k$;	Cardinality of the power set of real numbers.
Aleph_1	$\aleph_1 \le \beth_1$, depending on axioms	The smallest cardinal number sharply greater than $\aleph_0$.

Constants derived from the basic ones

*Spin-offs of **zero**. 0^0 = 1 is the number of mappings of an empty set into itself (the identity). Hence, "1" might be viewed as a spin-off of "0". **There is only one zero!***		
*Spin-offs of **one**. The best known are the **natural numbers** (iterated sums of 1's) and the **golden ratio**, via its continued fraction Φ = 1+1/(1+1/(1+1/(...)))*		
Φ = √(1+√(1+√(1+√(1+...)))); golden ratio again!	1.618 033 988 749 894 848 204 586 •••	Attractor of the mapping M1(#)=√(1+#) in *C*
√(1+√(0+√(1+√(0+...)))) ≡ √(1+√√(1+√√(1+√...)))	1.490 216 120 099 953 648 116 386 ...	Attractor of the mapping M10(#)=√(1+√(#)) in *C*
√(1+√√√(1+√√√(1+√√...)))	1.448 095 838 609 641 132 583 869 ...	Attractor of the mapping M100(#)=√(1+√(√(#))) in *C*
√(-1+√(1+√(-1+√(1+...))))	0.453 397 651 516 403 767 644 746 •••	Attractor of the mapping M(#)=√(-1+√(1+#)) in *C*
√(1+√(-1+√(1+√(-1+...))))	1.205 569 430 400 590 311 702 028 •••	Attractor of the mapping M(#)=√(1+√(-1+#)) in *C*
*Spin-offs of the **imaginary unit i**. Formally, **i** is a solution of $z^2 = -1$ and of $z = e^{z\pi/2}$. Hence, for any integer k, $\mathbf{i}^{2k} = (-1)^k$ and, for any z, $\mathbf{i}^{4k+z} = \mathbf{i}^z$*		
$\mathbf{i}^{\mathbf{i}} = e^{-\pi/2}$	0.207 879 576 350 761 908 546 955 ••• #t	the imaginary unit elevated to itself ... is real
$\mathbf{i}^{-\mathbf{i}} = (-1)^{-i/2} = e^{\pi/2}$	4.810 477 380 965 351 655 473 035 ••• #t	Inverse of the above. Square root of **Gelfond's constant**.
log(**i**) / **i** = π/2	1.570 796 326 794 896 619 231 321 ••• #t	Imaginary part of log(log(-1))
i ! = Γ(1+**i**) = **i***Γ(**i**) (see Gamma function)	0.498 015 668 118 356 042 713 691 •••	- **i** 0.154 949 828 301 810 685 124 955 •••
| **i** ! |, absolute value of the above	0.521 564 046 864 939 841 158 180 •••	arg(**i** !) = - 0.301 640 320 467 533 197 887 531 ••• rad
i^**i**^**i**^... infinite power tower of **i**; solution of $z = \mathbf{i}^z$	0.438 282 936 727 032 111 626 975 •••	+**i** 0.360 592 471 871 385 485 952 940 •••
| **i**^**i**^**i**^... |, absolute value of the above	0.567 555 163 306 957 825 384 613 •••	arg(**i**^**i**^**i**^...) = 0.688 453 227 107 702 130 498 767 ••• rad
Continued fraction c(**i**) = **i**/(**i**+**i**/(**i**+**i**/(...)))	0.624 810 533 843 826 586 879 804 •••	+**i** 0.300 242 590 220 120 419 158 909 ••• attractor of **i**/(**i**+#)
Continued fraction f(**i**) = **i**/(1+**i**/(1+**i**/(...)))	0.300 242 590 220 120 419 158 909 •••	+**i** 0.624 810 533 843 826 586 879 804 ••• attractor of **i**/(1+#)
Shared modulus |c(**i**)| = |f(**i**)|	0.693 205 464 623 797 320 434 363 •••	Note that **i**/(1+**i**/(1+**i**/(...))) = **i***conjugate[**i**/(**i**+**i**/(**i**+**i**/(...)))]
Infinite nested radical r(**i**) = √(**i**+√(**i**+√(**i**+ ...)))	1.300 242 590 220 120 419 158 909 •••	+**i** 0.624 810 533 843 826 586 879 804 ••• (note: r(**i**) = 1+f(**i**))

Modulus $\lvert\sqrt{(\mathbf{i}+\sqrt{(\mathbf{i}+\sqrt{(\mathbf{i}+ \ldots)})})}\rvert$ of r(**i**)	1.442 573 740 446 059 678 174 681 ...	r(**i**) is an attractor of the mapping M(#) = sqrt(**i**+#)
Infinite nested power $p^{+}(\mathbf{i}) = (\mathbf{i}+(\mathbf{i}+(\mathbf{i}+ \ldots)^{\mathbf{i}})^{\mathbf{i}})^{\mathbf{i}}$	0.269 293 437 169 311 227 190 868 •••	+**i** 0.012 576 454 573 863 832 381 561 •••
Modulus $\lvert(\mathbf{i}+(\mathbf{i}+(\mathbf{i}+ \ldots)^{\mathbf{i}})^{\mathbf{i}})^{\mathbf{i}}\rvert$ of $p^{+}(\mathbf{i})$	0.269 586 947 963 194 676 106 659 ...	$p^{+}(\mathbf{i})$ is an attractor of the mapping $M(\#) = (\mathbf{i}+\#)^{\mathbf{i}}$
Infinite nested power $p^{-}(\mathbf{i}) = (\mathbf{i}+(\mathbf{i}+(\mathbf{i}+ \ldots)^{-\mathbf{i}})^{-\mathbf{i}})^{-\mathbf{i}}$	1.339 209 168 529 111 968 359 269 •••	-**i** 0.5 (exact) ... $p^{-}(\mathbf{i})$ is the invariant point of $M(\#)=(\mathbf{i}+\#)^{-\mathbf{i}}$
Modulus $\lvert(\mathbf{i}+(\mathbf{i}+(\mathbf{i}+ \ldots)^{-\mathbf{i}})^{-\mathbf{i}})^{-\mathbf{i}}\rvert$ of $p^{-}(\mathbf{i})$	1.429 503 828 981 383 114 270 109 ...	$p^{-}(\mathbf{i})$ is also an attractor of the mapping $M'(\#) = (\# + (\mathbf{i}+\#)^{-\mathbf{i}})/2$
De Moivre numbers $e^{\mathbf{i}2\pi k/n}$	cos(2πk/n) + **i**.sin(2πk/n)	for any integer k and n≠0.
Roots of i, up to a term of 4k in the exponent (like $\mathbf{i}^{4k+1/4} = \mathbf{i}^{1/4}$, with any integer k):		
$\mathbf{i}^{1/2} = \sqrt{\mathbf{i}} = (1 + \mathbf{i})/\sqrt{2} = \cos(\pi/4) + \mathbf{i}.\sin(\pi/4)$	0.707 106 781 186 547 524 400 844 •••	+**i** 0.707 106 781 186 547 524 400 844 •••
$\mathbf{i}^{1/3} = (\sqrt{3} + \mathbf{i})/2 = \cos(\pi/6) + \mathbf{i}.\sin(\pi/6)$	0.866 025 403 784 438 646 763 723 •••	+**i** 0.5
$\mathbf{i}^{1/4} = \cos(\pi/8) + \mathbf{i}.\sin(\pi/8)$	0.923 879 532 511 286 756 128 183 •••	+**i** 0.382 683 432 365 089 771 728 459 •••
$\mathbf{i}^{1/5} = \cos(\pi/10) + \mathbf{i}.\sin(\pi/10)$	0.951 056 516 295 153 572 116 439 •••	+**i** 0.309 016 994 374 947 424 102 293 •••
$\mathbf{i}^{1/6} = \cos(\pi/12) + \mathbf{i}.\sin(\pi/12)$	0.965 925 826 289 068 2867 497 431 •••	+**i** 0.258 819 045 102 520 762 348 898 •••
$\mathbf{i}^{1/7} = \cos(\pi/14) + \mathbf{i}.\sin(\pi/14)$	0.974 927 912 181 823 607 018 131 •••	+**i** 0.222 520 933 956 314 404 288 902 •••
$\mathbf{i}^{1/8} = \cos(\pi/16) + \mathbf{i}.\sin(\pi/16)$	0.980 785 280 403 230 449 126 182 •••	+**i** 0.195 090 322 016 128 267 848 284 •••
$\mathbf{i}^{1/9} = \cos(\pi/18) + \mathbf{i}.\sin(\pi/18)$	0.984 807 753 012 208 059 366 743 •••	+**i** 0.173 648 177 666 930 348 851 716 •••
$\mathbf{i}^{1/10} = \cos(\pi/20) + \mathbf{i}.\sin(\pi/20)$	0.987 688 340 595 137 726 190 040 •••	+**i** 0.156 434 465 040 230 869 010 105 •••
One and i spin-offs		
(1+(1+(1+...)^**i**)^**i**)^**i**, attractor, in ***C***, of $M(\#)=(1+\#)^{\mathbf{i}}$	0.673 881 331 107 875 515 780 231 •••	+**i** 0.407 563 930 545 621 844 739 663 •••
| (1+(1+(1+...)^**i**)^**i**)^**i** |	0.787 543 272 396 837 010 967 660 •••	Absolute value of the above complex number
Means of 1 and **i**: Harmonic HM(1,**i**)=1+**i**, Geometric GM(1,**i**)=(1+**i**)/√2, Arithmetic AM(1,**i**)=(1+**i**)/2, Quadratic RMS(1,**i**)=0, Lehmer $L_2(1,\mathbf{i})=0$		
AGM(1,**i**)/(1+**i**) = second Lemniscate constant	0.599 070 117 367 796 103 337 484 •••	where AGM is the Arithmetic-Geometric Mean
***π spin-offs**. log(-1) = **π**.i, log(log(-1)) = log(**π**)+(**π**/2).i*		
2**π**	6.283 185 307 179 586 476 925 286 ••• #t	1/**π** = 0.318 309 886 183 790 671 537 767 ••• #t
2/**π**, Buffon's constant	0.636 619 772 367 581 343 075 535 ••• #t	$\pi^2 * (\pi/2-1)$ = 5.633 533 939 060 551 468 903 666 •••
π^2	9.869 604 401 089 358 618 834 490 ••• #t	$1/\pi^2$ = 0.101 321 183 642 337 771 443 879 ••• #t
√**π** = Geometric mean GM(1,π)	1.772 453 850 905 516 027 298 167 ••• #t	1/√**π** = 0.564 189 583 547 756 286 948 079 ••• #t
log(2**π**)/2 = ζ'(0)	0.918 938 533 204 672 741 780 329 •••	$= I_{x=a,a+1}\{\log(\Gamma(x)\} + a - a.\log(a)$. **Raabe** formula.
log(**π**) = real part of log(log(-1))	1.144 729 885 849 400 174 143 427 •••	$\mathrm{Log}_{10}(\pi)$ = 0.497 149 872 694 133 854 351 268 •••
log(**π**).**π**	3.596 274 999 729 158 198 086 001 •••	log(**π**)/**π** = 0.364 378 839 675 906 257 049 587 •••

π^{π}	36.462 159 607 207 911 770 990 826 •••	$\pi^{-\pi}$ = 0.027 425 693 123 298 106 119 556 •••
$\pi^{1/\pi}$	1.439 619 495 847 590 688 336 490 •••	$\pi^{-1/\pi}$ = 0.694 627 992 246 826 153 124 383 •••
Infinite power tower of 1/**π**	0.539 343 498 862 301 208 060 795 •••	(1/**π**)^(1/**π**)^(1/**π**)^...; also solution of x = π^{-x}
Infinite nested radical √(**π**+√(**π**+√(**π**+ ...)))	2.341 627 718 511 478 431 766 586 •••	= (1+sqrt(1+4**π**))/2
Means of 1 and **π** (for Geometric GM(1,**π**) = √**π**, see above)		
Harmonic HM(1,**π**)	1.517 093 985 989 552 290 688 861 •••	2***π**/(1+**π**)
Arithmetic-Geometric AGM(1,**π**)	1.918 724 665 977 634 529 660 378 •••	
Arithmetic AM(1,**π**)	2.070 796 326 794 896 619 231 321 •••	(1+**π**)/2
Quadratic RMS(1,**π**)	2.331 266 222 580 484 116 215 253 •••	sqrt((1+π^2)/2), the root-mean-square.
Lehmer mean L_2(1,**π**)	2.624 498 667 600 240 947 773 782 ...	(1+π^2)/(1+**π**)
Complex valued spin-offs, with the imaginary part in the last column:		
$\pi^{\pm i}$ = cos(log(**π**)) ± **i**.sin(log(**π**))	0.413 292 116 101 594 336 626 628 •••	±**i** 0.910 598 499 212 614 707 060 044 •••
i^{π} = cos(π^2/2) + **i**.sin(π^2/2)	0.220 584 040 749 698 088 668 945 •••	- **i** 0.975 367 972 083 631 385 157 482 •••
$\pi^{\pm i\pi}$ = cos(**π**.log(**π**)) ± **i**.sin(**π**.log(**π**))	-0.898 400 579 757 743 645 668 580 •••	±**i** -0.439 176 955 555 445 894 369 454 •••
$\pi^{\pm i/\pi}$ = cos(log(**π**)/**π**) ± **i**.sin(log(**π**)/**π**)	0.934 345 303 678 637 694 262 240 •••	±**i** 0.356 368 985 033 313 899 907 691 •••
Continued fraction **i**/(**π**+**i**/(**π**+**i**/(...)))	0.030 725 404 776 448 575 790 859 •••	+**i** 0.312 203 069 208 072 004 947 893 •••
***e* spin-offs**. *Note that e =* $S_{k=0,\infty}${1/k!} = $L_{k\&arr;\infty}${(1+1/k)^k} = ($e^{1/e}$)^($e^{1/e}$)^($e^{1/e}$)^... *(power tower of* $e^{1/e}$*)*		
2**e**	5.436 563 656 918 090 470 720 574 ••• #t	1/**e** = 0.367 879 441 171 442 321 595 523 ••• #t
e^2, conic constant, Schwarzschild constant	7.389 056 098 930 650 227 230 427 ••• #t	e^{-2} = 0.135 335 283 236 612 691 893 999 ••• #t
√**e**	1.648 721 270 700 128 146 848 650 ••• #t	1/√**e** = 0.606 530 659 712 633 423 603 799 ••• #t
e^e	15.154 262 241 479 264 189 760 430 •••	e^{-e} = 0.065 988 035 845 312 537 0767 901 •••
$e^{1/e}$	1.444 667 861 009 766 133 658 339 ••• #t	$e^{-1/e}$ = 0.692 200 627 555 346 353 865 421 ••• #t
Infinite power tower of 1/**e** (**Omega constant**)	0.567 143 290 409 783 872 999 968 •••	(1/**e**)^(1/**e**)^(1/**e**)^... Also solution of x = e^{-x} and Lambert W_0(1)
Infinite nested radical √(**e**+√(**e**+√(**e**+ ...)))	2.222 870 229 721 044 670 695 387 •••	= (1+sqrt(1+4**e**))/2
Ramanujan number: 262537412640768743 +	0.999 999 999 999 250 072 597 198 •••	exp(π√163). Closest approach of exp(π√n) to an integer.
Means of 1 and **e** (for Geometric GM(1,**e**) = √**e**, see above)		
Harmonic HM(1,**e**)	1.462 117 157 260 009 758 502 318 ...	2***e**/(1+**e**)
Arithmetic-Geometric AGM(1,**e**)	1.752 351 558 081 080 826 714 086 •••	
Arithmetic AM(1,**e**)	1.859 140 914 229 522 617 680 143 ...	(1+**e**)/2

Quadratic RMS(1,**e**)	2.048 054 698 846 035 487 304 997 ...	sqrt((1+**e**^{2})/2), the root-mean-square
Lehmer mean L_2(1,**e**)	2.256 164 671 199 035 476 857 968 ...	(1+**e**^{2})/(1+**e**)
Complex valued, with the imaginary part in the last column:		
$e^{\pm ie}$ = cos(e) ± **i**.sin(e)	- 0.911 733 914 786 965 097 893 717 •••	±**i** 0.410 781 290 502 908 695 476 009 •••
i^e = cos(eπ/2) ± **i**.sin(eπ/2)	-0.428 219 773 413 827 753 760 262 •••	±**i** -0.903 674 623 776 395 536 600 853 •••
$e^{\pm i/e}$ = cos(1/**e**) ± **i**.sin(1/**e**)	0.933 092 075 598 208 563 540 410 •••	±**i** 0.359 637 565 412 495 577 0382 503 •••
Continued fraction **i**/(**e**+**i**/(**e**+**i**/(...)))	0.045 820 234 137 835 028 060 158 •••	+**i** 0.355 881 727 107 562 782 631 319 •••
e and π combinations*, except trivial ones like, for any integer k, $e^{i\pi k} = (-1)^k$, $\cosh(i\pi k) = (-1)^k$, $\sinh(i\pi k) = 0$*		
eπ	8.539 734 222 673 567 065 463 550 •••	√(**eπ**) = 2.922 282 365 322 277 864 541 623 •••
e/π	0.865 255 979 432 265 087 217 774 •••	**π/e** = 1.155 727 349 790 921 717 910 093 •••
√(**π/e**)	1.075 047 603 499 920 238 722 755 •••	$I_{-\infty,+\infty}$\{exp(-x^2)*cos(x√2)\}
√(**π**/√**e**)	1.380 388 447 043 142 974 773 415 •••	$I_{-\infty,+\infty}$\{exp(-x^2)*cos(x)\}
e$^\pi$ = $(-1)^{-i}$, Gelfond's constant	23.140 692 632 779 269 005 729 086 ••• #t	**e**$^{-\pi}$ = 0.043 213 918 263 772 249 774 417 ••• #t
π^e	22.459 157 718 361 045 473 427 152 ••• #t	**π**$^{-e}$ = 0.044 525 267 266 922 906 151 352 ••• #t
e$^{1/\pi}$	1.374 802 227 439 358 631 782 821 •••	**e**$^{-1/\pi}$ = 0.727 377 349 295 216 469 724 148 ...
π$^{1/e}$	1.523 671 054 858 931 718 386 285 •••	**π**$^{-1/e}$ = 0.656 309 639 020 204 707 493 834 •••
sinh(**π**)/**π** = (e^π-$e^{-\pi}$)/2π	3.676 077 910 374 977 720 695 697 •••	$P_{n>0}$\{1+1/n^2)\}
Infinite power tower of **e/π**	0.880 367 778 981 734 621 826 749 •••	Solution of x = $(e/\pi)^x$
Infinite power tower of **π/e**	1.187 523 635 359 249 905 438 407 •••	Solution of x = $(\pi/e)^x$
Continued fraction **e/(π+e/(π+e/(...)))**	0.706 413 134 087 300 069 274 143 •••	Solution of x(x+π)=e;. Attractor of the mapping M(#)=e/(π+#)
Continued fraction **π/(e+π/(e+π/(...)))**	0.874 433 950 941 209 866 417 966 •••	Solution of x(x+e)=π. Attractor of the mapping M(#)=π/(e+#)
Arithmetic-Geometric mean AGM(**e**,**π**)	2.926 108 551 572 304 696 665 895 •••	
$e^{\pm i/\pi}$ = cos(1/**π**) ± **i**.sin(1/**π**)	0.949 765 715 381 638 659 994 406 •••	±**i** 0.312 961 796 207 786 590 745 276 •••
γ spin-offs and some e and γ combinations		
2γ	1.154 431 329 803 065 721 213 024 ...	1/γ = 1.732 454 714 600 633 473 583 025 •••
log(γ)	-0.549 539 312 981 644 822 337 661 •••	Log(γ) = -0.238 661 891 216 832 389 460 288 ...
γ+log(π)	1.721 945 550 750 933 034 749 939 ...	= Ci(πz)+Cin(πz)-log(z); Ci, Cin being cosine integrals
eγ	1.569 034 853 003 742 285 079 907 •••	**e**/γ = 4.709 300 169 327 103 330 744 143 •••
e$^\gamma$	1.781 072 417 990 197 985 236 504 •••	$L_{n\to\infty}$\{$P_{k=1,n}$\{(1-1/prime(k))$^{-1}$\}/log(prime(n))\}

$e^{-\gamma}$	0.561 459 483 566 885 169 824 143 •••	$L_{n\to\infty}$ {φ(n)*log(log(n))/n}, φ(n) being the Euler totient
Infinite power tower of γ	0.685 947 035 167 428 481 875 735 •••	γ^γ^γ^...; solution of $x = \gamma^x$
Infinite nested radical √(γ+√(γ+√(γ+ ...)))	1.409 513 971 801 166 373 157 694 ...	= (1+sqrt(1+4γ))/2
Arithmetic-Geometric mean AGM(1,γ)	0.774 110 217 793 039 338 108 461 ...	
$\zeta(2)/e^{\gamma} = \pi^2/(6*e^{\gamma})$	0.923 563 831 674 181 382 323 509 •••	$L_{n\to\infty}$ {log(prime(n))* $P_{k=1,n}$ {$(1+1/\text{prime}(k))^{-1}$}}
$e^{\pm i\gamma} = \cos(\gamma) \pm i \sin(\gamma)$	0.837 985 287 880 196 539 954 992 •••	±**i** 0.545 692 823 203 992 788 157 356 •••
***Golden ratio spin-offs and combinations**. Note that Φ = 1+1/(1+1/(1+1/(1+ ...))) = √(1+√(1+√(1+ ...))) can be viewed as a spin-off of 1.*		
Complex golden ratio $\Phi_c = 2.e^{i\pi/5}$	1.618 033 988 749 894 848 204 586 •••	+**i** 1.175 570 504 584 946 258 337 411 •••
Associate of Φ = imaginary part of Φ_c	1.175 570 504 584 946 258 337 411 •••	2.sin(π/5), while Φ = 2.cos(π/5) = real part of Φ_c
Square root of Φ	1.272 019 649 514 068 964 252 422 •••	√Φ; ratio of the sides of squares with golden-ratio areas.
Square root of the inverse φ	0.786 151 377 757 423 286 069 559 •••	1/√Φ
Cubic root of Φ	1.173 984 996 705 328 509 966 683 •••	$\Phi^{1/3}$, ratio of edges of cubes with golden-ratio volumes.
Cubic root of the inverse φ	0.851 799 642 079 242 917 055 213 ...	$1/\Phi^{1/3}$
π/Φ = π.φ	1.941 611 038 725 466 577 346 865 •••	Area of **golden ellipse** with semi_axes {1,φ}
log(Φ) = - log(φ) = acosh((√5)/2) = -**i** acos((√5)/2)	0.481 211 825 059 603 447 497 758 •••	Natural logarithm of Φ
$\Phi^{2/\pi}$, such as in the golden spiral	1.358 456 274 182 988 435 206 180 •••	(2/π) **log**(Φ) = 0.306 348 962 530 033 122 115 675 •••
Infinite power tower of the inverse φ	0.710 439 287 156 503 188 669 345 •••	φ^φ^φ^...; also solution of $x = \varphi^x = \Phi^{-x}$
Infinite nested radical √(Φ+√(Φ+√(Φ+ ...)))	1.866 760 399 173 862 092 990 872 ...	= (1+sqrt(1+4Φ))/2
Arithmetic-Geometric mean AGM(1,Φ)	1.290 452 026 322 977 466 179 732 ...	
Named real math constants. Hint: See a list of many **corresponding continued fractions** on Wikipedia.		
Alladi-Grinstead constant	0.809 394 020 540 639 130 717 931 •••	exp($S_{n>0}${(zeta(n+1)-1)/n}-1). Re: factorizations of n!
Apéry's constant ζ(3)	1.202 056 903 159 594 285 399 738 ••• #t	Special value of the Riemann zeta function ζ(x)
Artin's constant	0.373 955 813 619 202 288 054 728 •••	$P_{\text{prime } p}${1-1/(p(p-1))}
Backhouse constant B = $L_{k\to\infty}\lvert q_{k+1}/q_k\rvert$ =	1.456 074 948 582 689 671 399 595 •••	when Q(x)=$S_{k\geq 0}${q_k x^k} = 1/P(x), with P(x) defined below
Inverse of Backhouse constant 1/B	0.686 777 834 460 634 954 426 540 •••	-1/B is the only real root of P(x)=1+$S_{k\geq 1}${prime(k) x^p}
Barban's constant	2.596 536 290 450 542 073 632 740 •••	$P_{\text{prime } p}${1+($3p^2$-1)/[p(p+1)(p^2-1)]}
Bernstein's constant β	0.280 169 499 023 869 133 036 436 •••	Re: theory of function approximations by polynomials
Besicovitch constant (a 10-normal number)	0.149 162 536 496 481 100 121 144 •••	String concatenation of squares in base 10
Blazys constant	2.566 543 832 171 388 844 467 529 •••	Its Blazys' expansion generates prime numbers

Boling's constant	1.805 917 418 986 691 013 997 505 •••	$\boldsymbol{S}_{n\geq1}\{(n(n+1)/2)/\boldsymbol{P}_{k\geq0}\{n!/k!\}\}$
Brun's constant B_2 for twin primes	1.902 160 583 104 ••• (?)	Sum of reciprocals of prime pairs (p,p+2)
Brun's constant B_4 for cousin primes	1.197 044 9 ••• (?)	Sum of reciprocals of prime pairs (p,p+4)
Brun's constant B'_4 for prime quadruples	0.870 588 380 ••• (?)	Sum of reciprocals of prime quadruplets (p,p+2,p+6,p+8)
Buffon's constant	0.636 619 772 367 581 343 075 535 ••• #t	2/π. Solution of a 1733 *needle-throwing problem*
Cahen's constant C	0.643 410 546 288 338 026 182 254 •••	$C = \boldsymbol{S}_{k\geq0}\{(-1)^k/(s_k-1)\}$, where s_k is the **Sylvester**'s sequence
Catalan's constant C	0.915 965 594 177 219 015 054 603 •••	$C = \boldsymbol{S}_{k\geq0}\{(-1)^k2\}$
Champernowne constant C_{10} (10-normal)	0.123 456 789 101 112 131 415 161 ••• #t	String concatenation of natural numbers in base 10
Copeland-Erdös constant (10-normal number)	0.235 711 131 719 232 931 374 143 •••	String concatenation of prime numbers in base 10
Conway's constant λ(3)	1.303 577 269 034 296 391 257 099 •••	Growth rate of derived look-and-say strings
Delian constant	1.259 921 049 894 873 164 767 210 •••	$2^{1/3}$. The name refers to the Oracle on island Delos.
Dottie number	0.739 085 133 215 160 641 655 312 ••• #t	The only real solution of x = cos(x)
Efimov's scaling constant in quantum physics	22.694 382 595 366 695 192 860 217 •••	= exp(π/r), r being the root of x.cosh(xπ/2)=8.sinh(xπ/6)/√3.
Embree - Trefethen constant β	0.70258 ••• (?)	Theory of 2nd order recurrences with random add/subtract
Erdös - Borwein constant	1.606 695 152 415 291 763 783 301 •••	$\boldsymbol{S}_{n>0}\{1/(2^n -1)\}$
Favard constants $K_r = \pi^r R$	$R = {}^1/_1, {}^1/_2, {}^1/_8, {}^1/_{24}, {}^5/_{384}, {}^1/_{240}, {}^{61}/_{46080}$, •••	$K_r = (4/\pi)\boldsymbol{S}_{k\geq0}\{[(-1)^k/(2k+1)]^{r+1}\}$. Also Akhiezer - Krein - Favard cons.
Feigenbaum reduction parameter α	-2.502 907 875 095 892 822 283 902 •••	Appears in the theory of chaos
Feller - Tornier constant F	0.661 317 049 469 622 335 289 765 •••	$F = (1+\boldsymbol{P}_{\text{prime } p}\{1-2/p^2\})/2$. See also
Often (mis)labeled as Feller - Tornier's:	0.322 634 098 939 244 670 579 531 •••	$\boldsymbol{P}_{\text{prime } p}\{1-2/p^2\}$.
Feigenbaum bifurcation velocity δ	4.669 201 609 102 990 671 853 203 ••• #t	Appears in the theory of chaos
Flajolet-Odlyzko constant	0.757 823 011 268 492 837 742 175 •••	$2\ \boldsymbol{I}_{t=0,\infty}\{1-\exp(Ei(-t)/2)\}$
Foias constant **α**	1.187 452 351 126 501 054 595 480 •••	$x_{n+1}=(1+1/x_n)^n$ converges for all $x_1>0$ except $x_1 = \alpha$
Foias-Ewing constant **β**	2.293 166 287 411 861 031 508 028 •••	Attractor of $f(\#)=(1+1/\#)^\#$; converges for any starting x>0
Fransén-Robinson constant	2.807 770 242 028 519 365 221 501 •••	$\boldsymbol{I}_{x=0,\infty}\{1/\Gamma(x)\}$; see Gamma function
Gauss' constant G	0.834 626 841 674 073 186 814 297 •••	1/AGM(1,√2); AGM is the Arithmetic-Geometric mean
Gauss-Kuzmin-Wirsing constant λ_1	0.303 663 002 898 732 658 597 448 •••	2nd eigenvalue of GKW functional operator (first is 1)
Gelfond's constant	23.140 692 632 779 269 005 729 086 ••• #t	$e^\pi = (-1)^{-i}$
Gelfond-Schneider constant	2.665 144 142 690 225 188 650 297 ••• #t	2^√2
The last two constants are sometimes called	Hilbert's:	he named them in his 1900 Mathematical Problems address

Gerver's moving sofa constant	2.219 531 668 871 97 (? largest so far)	A sofa that can turn unit-width hallway corner
Hammersley's lower bound on Gerver's const.	2.207 416 099 162 477 962 306 856 •••	π/2 + 2/π. Also the **mean angle of a random rotation**.
Gibbs constant G	1.851 937 051 982 466 170 361 053 •••	Si(π), $\boldsymbol{I}_{x=0,pi;}${sin(x)/x}.
Wilbraham-Gibbs constant G'	1.178 979 744 472 167 270 232 028 •••	2G/π. Quantifies Gibbs effect in Fourier Transform.
Gieseking's constant G	1.014 941 606 409 653 625 021 202 •••	Integral of log(2.cos(x/2)) from 0 to 2π/3.
Glaisher-Kinkelin constant A	1.282 427 129 100 622 636 875 342 •••	exp(1/12 -ζ'(-1)). Appears often in number theory
Kinkelin constant	-0.165 421 143 700 450 929 213 919 •••	1/12-log(A) = ζ'(-1). Unstable nomenclature.
Golomb-Dickman constant λ	0.624 329 988 543 550 870 992 936 •••	Average longest cycle length in random permutations
Gompertz constant G	0.596 347 362 323 194 074 341 078 •••	G = -e.Ei(-1), Ei(x) being the *exponential integral*
Graham's constant G(3)	0.783 591 464 262 726 575 401 950 •••	Digits of 3^^k, read backwards, for k->infinity
Grossmann's constant	0.737 338 303 369 29 ••• (?)	The only x for which {a_0=1; a_1=x; $a_{n+2}=a_n/(1+a_{n+1})$} converges
Heat - Brown - Moroz constant	0.001 317 641 154 853 178 109 817 •••	$\boldsymbol{P}_{\text{prime } p}$ {$(1-1/p)^7(1+(7p+1)/p^2)$}
Kempner-Mahler number κ	0.816 421 509 021 893 143 708 079 ••• #t	$\boldsymbol{S}_{k\geq 0}$ {1/2^(2^k)}
Khinchin's constant K_0	2.685 452 001 065 306 445 309 714 •••	$\boldsymbol{P}_{n\geq 1}\{(1+1/(n(n+2)))^{\log_2(n)}\}$. Limit geom.mean of cont.fract. terms
Khinchin-Lévy constant β	1.186 569 110 415 625 452 821 722 •••	$\beta = \pi^2/(12.\ln 2) = \boldsymbol{S}_{k\geq 1}\{(-1)^{k+1}/k^2\}/\boldsymbol{S}_{k\geq 1}\{(-1)^{k+1}/k\} = \eta(2)/\eta(1)$
Lévy constant γ	3.275 822 918 721 811 159 787 681 •••	$\gamma = e^{\beta} = \exp(\pi^2/(12.\ln 2))$. Unstable nomenclature
Knuth's random-generators constant	0.211 324 865 405 187 117 745 425 •••	(1-1/√3)/2
Kolakoski constant γ	0.794 507 192 779 479 276 240 362 •••	Related to Kolakoski sequence
Komornik-Loreti constant q	1.787 231 650 182 965 933 013 274 ••• #t	Least x such that $\boldsymbol{S}_{k>0}\{a_k/x^k\}$=1 for a unique sequence {a_k}
Landau-Ramanujan constant	0.764 223 653 589 220 662 990 698 •••	Related to the density of sums of two integer squares
Lagrange numbers L_1=√5, L_2=√8, L_3=(√221)/5=	2.973 213 749 463 701 104 522 401 •••	L_n = sqrt(9-4/M(n)^2), M(n) being n-th **Markov** number
Laplace limit constant λ	0.662 743 419 349 181 580 974 742 •••	Let $\eta = \sqrt{(1+\lambda^2)}$; then $\lambda e^{\eta} = 1+\eta$ Click here for more
Lieb's square ice constant	1.539 600 717 839 002 038 691 063 •••	(8/9)√3. Counting directed graphs. Related to ice lattice
Twenty-Vertex entropy constant	2.598 076 211 353 315 940 291 169 •••	(3/2)√3. As above, but for triangular lattices
Linnik's constant L	1 ≤ L ≤ 11/2, **that is all we know**	Regards primes in integer arithmetic progressions
Liouville's constant	0.110 001 000 000 000 000 000 001 ••• #t	$\boldsymbol{S}_{n>0}$ {10^(-n!)}
Loch's constant	0.970 270 114 392 033 925 740 256 •••	6.log(2).log(10)/π^2; convergence rate of continued fractions
Madelung's constant M_3	-1.747 564 594 633 182 190 636 212 •••	M3 = $\boldsymbol{S}_{i,j,k}\{(-1)^{i+j+k}$/sqrt(i^2+j^2+k^2)}
Meissel - Mertens constant B_1	0.261 497 212 847 642 783 755 426 •••	$\boldsymbol{L}_{n\to\infty}\{\boldsymbol{S}_{\text{prime } p\leq n}\{1/p\}-\log(\log(n))\}$

Meissel - Mertens constant is also known as	**Kronecker constant**, and as	**Hadamard - de la Vallee-Poussin constant**
Mills' constant θ	1.306 377 883 863 080 690 468 614 •••	Smallest θ such that floor(θ^3^n) is prime for any n
Minkowski-Bower constant b	0.420 372 339 423 223 075 640 993 •••	For Minkowski question-mark function, a solution of **?**x = x
MRB constant (after Marvin R. Burns)	0.187 859 642 462 067 120 248 517 •••	$\boldsymbol{S}_{k>0}\{(-1)^k (k^{1/k} - 1)\}$
Oscillatory-integral MRB constant, modulus	0.687 652 368 927 694 369 809 312 •••	abs($\boldsymbol{L}_{n\to\infty}\{\boldsymbol{I}_{x=1,2n}\{e^{i\pi x}\ x^{1/x}\}\}$). Note: $e^{i\pi x} \equiv (-1)^x$
Oscillatory-integral MRB constant, real part	0.070 776 039 311 528 803 539 528 •••	real($\boldsymbol{L}_{n\to\infty}\{\boldsymbol{I}_{x=1,2n}\{e^{i\pi x}\ x^{1/x}\}\}$), also called MKB constant
Oscillatory-integral MRB constant, imag part	-0.684 000 389 437 932 129 182 744 •••	imag($\boldsymbol{L}_{n\to\infty}\{\boldsymbol{I}_{x=1,2n}\{e^{i\pi x}\ x^{1/x}\}\}$)
Murata's constant	2.826 419 997 067 591 575 546 391 •••	$\boldsymbol{P}_{\text{prime } p}\{1+1/(p-1)^2\}$
Niven's constant C	1.705 211 140 105 367 764 288 551 •••	Mean maximal exponent in prime factorization
Norton's constant B for Euclid's GCD algorithm	0.065 351 425 923 037 321 378 782 •••	for 1≤n,m≤n, GCD(n,m) takes av. (12.log(2)/π^2)log(n)+B steps.
Odlyzko-Wilf constant K	1.622 270 502 884 767 315 956 950 •••	When x_0=1, x_{n+1}=ceil(3x_n/2), then x_n=floor(K.$(3/2)^n$)
Omega constant = Lambert W_0(1)	0.567 143 290 409 783 872 999 968 •••	Root of (x-e^{-x}) or (x+log(x)). See also.
Otter's constant α	2.955 765 285 651 994 974 714 817 •••	Appears in enumeration of rooted and unrooted trees:
Otter's asymptotic constant β_u	0.534 949 606 1(?) •••	for unrooted trees: UT(n) ~ $\beta_u\ \alpha^n\ n^{-5/2}$
Otter's asymptotic constant β_r	0.439 924 012 571 (?) •••	for rooted trees: RT(n) ~ $\beta_r\ \alpha^n\ n^{-3/2}$ (V. Kotesovec)
Plouffe's constant	0.147 583 617 650 433 274 175 401 ••• #t	= atan(1/2)/π
Pogson's ratio	2.511 886 431 509 580 111 085 032 •••	$100^{1/5}$; in astronomy 1 stellar magnitude brightness ratio
Polya's random-walk constant p_3	0.340 537 329 550 999 142 826 273 •••	Probability a 3D-lattice random walk returns back. See also
Porter's constant C	1.467 078 079 433 975 472 897 798 •••	Arises analyzing efficiency of Euclid's GCD algorithm
Prévost's constant **(**reciprocal Fibonacci**)**	3.359 885 666 243 177 553 172 011 •••	Sum of reciprocals of Fibonacci numbers
Reciprocal even Fibonacci constant	1.535 370 508 836 252 985 029 852 •••	Sum of reciprocals of even-indexed Fibonacci numbers
Reciprocal odd Fibonacci constant	1.824 515 157 406 924 568 142 158 •••	Sum of reciprocals of odd-indexed Fibonacci numbers
Prince Rupert's cube constant	1.060 660 171 779 821 286 601 266 •••	(3√2)/4. Side of largest cube passing through a unit cube
Rényi's parking constant m	0.747 597 920 253 411 435 178 730 •••	Linear space occupied by randomly parked cars
Robbins, or **cube line picking** constant Δ(3)	0.661 707 182 267 176 235 155 831 •••	Average length of a random line inside a unit 3D cube
Salem number σ_1	1.176 280 818 259 917 506 544 070 •••	Related to the structure of the set of algebraic integers
Sarnak's constant	0.723 648 402 298 200 009 408 849 •••	$\boldsymbol{P}_{\text{prime } p\geq 3}\{1-(p+2)/p^3\}$
Schwarzschild constant, or conic constant	7.389 056 098 930 650 227 230 427 ••• #t	$\mathbf{e}^2$
Shall-Wilson or twin primes constant Π_2	0.660 161 815 846 869 573 927 812 •••	$\boldsymbol{P}_{\text{primes } p\geq 3}\{1-1/(p-1)^2\}$

Sierpinski constant S	0.822 825 249 678 847 032 995 328 •••	S = log(4*$\pi^3 e^{2\gamma}/\Gamma^4(1/4)$)
and Sierpinski constant K = πS	2.584 981 759 579 253 217 065 893 •••	Related to decompositions of n into k squares
Soldner's constant (or **Ramanujan-Soldner's**) μ	1.451 369 234 883 381 050 283 968 •••	Positive real root of logarithmic integral li(x).
Somos' quadratic recurrence constant σ	1.661 687 949 633 594 121 295 818 •••	σ=√(1√(2√(3 ...))). Somos's sequence tends to σ^(2^n)/(n+2)
Stieltjes constants γ_n:	For values, click here	Coefficients of the expansion of Riemann's ζ(s) about s=1
Taniguchi's constant	0.678 234 491 917 391 978 035 538 •••	$\boldsymbol{P}_{\text{prime } p}\{1-3/p^3+2/p^4+1/p^5-1/p^6\}$
Theodorus' constant	1.732 050 807 568 877 293 527 446 •••	√3.
Thue-Morse constant	0.412 454 033 640 107 597 783 361 ••• #t	**Thue-Morse sequence** as a binary number .0110 ...
Viswanath's constant	1.131 988 248 794 3 ••• (?)	Growth of Fibonacci-like sequence with random +/-
Wallis' constant	2.094 551 481 542 326 591 482 386 •••	Root of x^3-2x-5. A kind of historic curiosity.
Weierstrass constant σ(1|1,**i**)	0.474 949 379 987 920 650 332 504 •••	$2^{5/4}\pi^{1/2}e^{\pi/8}/\Gamma^2(1/4)$. σ is the Weierstrass σ function.
Wyler's constant	0.007 297 348 130 031 832 128 956 •••	$(9/(16*\pi^3))(\pi/5!)^{1/4}$. Approximation to fine structure constant
Zagier's constant	0.180 717 104 711 806 478 057 792 •••	Limit of [Count of Markoff numbers < x]/log(3x)^2
Zolotarev-Schur constant σ	0.311 078 866 704 819 209 027 546 •••	σ = (1-E(c)/K(c))/c^2, ... see the link for more details

Other notable real-valued math constants.

Note: OGF stands for Ordinary Generating Function.

Continued fractions constant	1.030 640 834 100 712 935 881 776 •••	$(1/6)\pi^2$/(log(2)log(10)). Mean c.f.terms per decimal digit
Evil numbers (see also). Some examples:	**π**, Φ, $2^{1/3}$, $3^{1/2}$, $\boldsymbol{\pi}^{666}$, √6, ... and many more:	Running sum of their fractional-part digits hits 666
Probability that a random real number is evil:	0.2 - 2.166222683713523944720••• e-64	starts with "0.1", followed by 62 "9"s, and then "783..."
FoxTrot series sum	0.239 560 747 340 741 949 878 153 •••	= $\boldsymbol{S}_{k\geq1}\{(-1)^{n+1}\, n^2 /(1+n^3)\}$
Hard square entropy constant $\boldsymbol{L}_{n\to\infty}\{F_n$^$(1/n^2)\}\}$	1.503 048 082 475 332 264 322 066 •••	F_n = number of nXn binary matrices with no adjacent 1's
√(1+√(2+√(3+√(4+√(5+ ...)))))	1.757 932 756 618 004 532 708 819 •••	Infinite nested radical of natural numbers
√(2+√(3+√(5+√(7+√(11+ ...)))))	2.103 597 496 339 897 262 619 939 •••	Infinite nested radical of primes
$(1+(1+(1+(1+ \ldots)^{1/4})^{1/3})^{1/2})^{1/1}$	2.517 600 167 877 718 891 370 658 ...	An infinite nested power on one's
$(1!+(2!+(3!+(4!+ \ldots)^{1/4})^{1/3})^{1/2})^{1/1}$	3.005 583 659 206 261 169 270 945 ...	An infinite nested power on factorials
(1/2)^((1/2)^((1^2)^ ...))	0.641 185 744 504 985 984 486 200 •••	Infinite power tower of 1/2; solution of x = 2^{-x}
Lemniscate constant L	2.622 057 554 292 119 810 464 839 •••	L = πG, where G is the **Gauss**' constant
First lemniscate constant L_A	1.311 028 777 146 059 905 232 419 •••	L_A = L/2 = πG/2
Second lemniscate constant L_B	0.599 070 117 367 796 103 337 484 •••	L_B = 1/(2G) = AGM(1,**i**)/(1+**i**)
Mandelbrot set area	1.506 591 ••• (?)	Hard to estimate

(1-1/2)(1-1/4)(1-1/8)(1-1/16) ...	0.288 788 095 086 602 421 278 899 •••	Infinite product $\boldsymbol{P}_{k=1,\infty}\{1-x^k\}$, for x=1/2
Quadratic Class Number constant	0.881 513 839 725 170 776 928 391 •••	$\boldsymbol{P}_{\text{prime } p}\{1-1/(p^2(p+1))\}$
Rabbit constant	0.709 803 442 861 291 314 641 787 •••	See the binary rabbit sequence and number
Real root of P(x) ≡ <OGF for primes>	-0.686 777 834 460 634 954 426 540 •••	$P(x)=1+\boldsymbol{S}_{k>0}\{prime(k).x^k\}$. The real root is unique.
Square root of Gelfond - Schneider constant	1.632 526 919 438 152 844 773 495 ••• #t	√2^√2 = 2^(1/√2). Notable because proved transcendental
Sum $1+1/2^2+1/3^3+1/4^4+$ ...	1.291 285 997 062 663 540 407 282 •••	$\boldsymbol{S}_{k>0}\{1/k^k\}$
Sum of reciprocals of exponential factorials	1.611 114 925 808 376 736 111 111, ••• #t	Search this doc for "exponential factorials"
Sum of reciprocals of distinct powers	0.874 464 368 404 944 866 694 351 •••	See also the perfect powers without repetitions
Tribonacci constant	1.839 286 755 214 161 132 551 852 •••	Asymptotic growth rate of tribonacci numbers.
Tetranacci constant	1.927 561 975 482 925 304 261 905 •••	Asymptotic growth rate of tetranacci numbers.
Z-numbers ξ: for any k>1, 0≤ frac(ξ(3/2)^k) <1/2	**No Z-number is known**	There exists at most one in each (n,n+1) interval, n>0
Constants related to harmonic numbers $H_n = \boldsymbol{S}_{k=1,2,...,n}\{1/k\}$		
$\boldsymbol{S}_{n\geq1}\{(-1)^n H_n/n!\}$	-0.484 829 106 995 687 646 310 401 ...	
$\boldsymbol{S}_{n\geq1}\{H_n/n!\}$	2.165 382 215 326 936 359 420 986 ...	
$\boldsymbol{S}_{n\geq1}\{(-1)^n H_n/n!^2\}$	-0.672 462 966 936 363 624 928 336 ...	= $\gamma.J_0(2) - (\pi/2).Y_0(2)$. See Bessel functions for J_0 and Y_0
$\boldsymbol{S}_{n\geq1}\{H_n/n!^2\}$	1.429 706 218 737 208 313 186 746 ...	= $(\log(\mathbf{i})+\gamma).J_0(2\mathbf{i}) - (\pi/2).Y_0(2\mathbf{i})$
Hausdorff dimensions for selected fractal sets		
Feigenbaum attractor-repeller	0.538 045 143 580 549 911 671 415 •••	No explicit formula
Cantor set, removing 2nd third	0.630 929 753 571 457 437 099 527 ••• #t	$\log_3(2) = \log(2)/\log(3)$. See also Devil's staircase function
Asymmetric **Cantor** set, removing 2nd quarter	0.694 241 913 630 617 301 738 790 •••	$\log_2(\Phi) = \log(\Phi)/\log(2)$, related to the golden ratio Φ
Real numbers with no even decimal digit	0.698 970 004 336 018 804 786 261 •••	Log(5) = log(5)/log(10)
Rauzy fractal boundary r	1.093 364 164 282 306 639 922 447 •••	Let $z^3-z^2-z-1 = (z-c)(z-a)(z-a^*)$. Then $2\|a\|^{3r}+\|a\|^{4r}=1$
2D **Cantor** dust, **Koch** snowflake, plus more	1.261 859 507 142 914 874 199 054 ••• #t	$\log_3(4) = 2.\log(2)/\log(3)$. A case of **Liedenmayer**'s systems
Apollonian gasket (triples of circles in 2D plane)	1.305 686 729 (?) •••	No explicit formula
Heighway-Harter dragon curve boundary	1.523 627 086 202 492 106 277 683 •••	$\log_2((1+(73-6\sqrt{87})^{1/3}+(73+6\sqrt{87})^{1/3})/3)$
Sierpinsky triangle	1.584 962 500 721 156 181 453 738 ••• #t	$\log_2(3) = \log(3)/\log(2)$
3D **Cantor** dust, **Sierpinski** carpet	1.892 789 260 714 372 311 298 581 ••• #t	$\log_3(8) = 3.\log(2)/\log(3)$
Lévy C curve | **Lévy** fractal / dragon	1.934 007 182 988 290 978 (?) •••	No explicit formula
Menger sponge	2.726 833 027 860 842 041 396 094 •••	$\log_3(20) = \log(20)/\log(3)$

Simple continued fractions CF{a} of the form $a_0+1/(a_1+1/(a_2+1/(a_3+(...))))$ for integer sequences $a = \{a_0,a_1,a_2,a_3,...\}$. See also a list of CF's for various constants.		
a_k = 1, k=0,1,2,3,...	1.618 033 988 749 894 848 204 586 •••	golden ratio Φ
a_k = k, nonnegative integers	0.697 774 657 964 007 982 006 790 •••	
a_k = prime(k+1), primes	2.313 036 736 433 582 906 383 951 •••	
$a_k = k^2$, perfect squares	0.804 318 561 117 157 950 767 680 •••	
$a_k = 2^k$, powers of 2	1.445 934 640 512 202 668 119 554 •••	See also OEIS A096641
a_k = k!, factorials	1.684 095 900 106 622 500 339 633 •••	
Special continued fractions of the form $a_1+a_1/(a_2+a_3/(a_3+(...)))$ for integer sequences a = {a1,a2,a3,...}.		
a_n = n, natural numbers	1.392 211 191 177 332 814 376 552 •••	= 1/(e-2)
a_n = prime(n), primes	2.566 543 832 171 388 844 467 529 •••	**Blazys** constant
$a_n = n^2$, squares > 0	1.226 284 024 182 690 274 814 937 •••	
$a_n = 2^{n-1}$, powers of 2	1.408 615 979 735 005 205 132 362 •••	
a_n = (n-1)!, factorials	1.698 804 767 670 007 211 952 690 •••	
***Alternating sums of inverse powers of prime numbers**, sip(x) = $-S_{k>0}\{(-1)^k/p^x(k)\}$, where p(n) is the n-th prime number*		
sip(1/2)	0.347 835 4 ...	1/√2 -1/√3 +1/√5 -1/√7 +1/√11 -1/√13 +1/√17 -...
sip(1)	0.269 606 351 916 7 •••	1/2 -1/3 +1/5 -1/7 +1/11 -1/13 +1/17 -...
sip(2)	0.162 816 246 663 601 41 •••	1/2^2 -1/3^2 +1/5^2 -1/7^2 +1/11^2 -1/13^2 +...
sip(3)	0.093 463 631 399 649 889 112 4 •••	1/2^3 -1/3^3 +1/5^3 -1/7^3 +1/11^3 -1/13^3 +...
sip(4)	0.051 378 305 166 748 282 575 200 •••	1/2^4 -1/3^4 +1/5^4 -1/7^4 +1/11^4 -1/13^4 +...
sip(5)	0.027 399 222 614 542 740 586 273 •••	1/2^5 -1/3^5 +1/5^5 -1/7^5 +1/11^5 -1/13^5 +...

Some notable natural and integer numbers

Large integers		
Bernay's number	67^257^729	Originally an example of a hardly ever used number
Googol	10^{100} = 10^100	A large integer ...
Googolplex	10^{googol} = 10^10^100	... a larger integer ...
Googolplexplex	$10^{\text{googolplex}}$ = 10^10^10^100	... and a still larger one.
Graham's number (last 30 digits)	••• 5186439059104575627262464195387	3^^...^^3, 64 times (3^^64); see **Graham's constant**
Shannon number, lower bound estimate:	10^120	The game-tree complexity of chess
Skewes' numbers	10^14 < n < e^e^e^79	Bounds on the first integer n for which π(n) < li(n)

Notable | interesting integers

Ishango bone prime quadruplet	11, 13, 17, 19	Crafted in the paleolithic Ishango bone
Hardy-Ramanujan number	$1729 = 1^3+12^3 = 9^3+10^3$ (see A080642)	Smallest cubefree taxicab number T(2); see below
Heegner numbers h (full set)	1,2,3,7,11,19,43,67,163 (see A003173)	The quadratic ring Q(√(-h)) has class number 1
Vojta's number	15170835645 (see A023050)	Smallest cubefree T(3) taxicab number (see the link)
Gascoigne-Moore number	1801049058342701083 (see A080642)	Smallest cubefree T(4) taxicab number (see the link)
Tanaka's number	906150257 (see A189229)	Smallest number violating Polya conjecture that L(n>1)≤0
Related to **Lie groups ...**		
Orders of **Weyl** groups of type E_n, n=6,7,8	51840, 2903040, 696729600 (A003134)	$2^7 3^4 5^1$, $2^{10} 3^4 5^1 7^1$, $2^{14} 3^5 5^2 7^1$, respectively.
Largest of ...		
Narcissistic numbers	There are only 88 of them (A005188	max = 115132219018763992565095597973971522401
Not composed of two abundants	20161 (see A048242)	Exactly 1456 integers are the sum of two abundants
Consecutive 19-smooth numbers	11859210, 11859211 (see A002072)	In case you wonder: this pair was singled-out on MathWorld
Factorions in base 10	40585 (see A193163)	Equals the sum of factorials of its dec digits
Factorions in base 16	2615428934649 (see A193163)	Equals the sum of factorials of its hex digits
Right-truncatable prime in base 10	73939133 (see A023107)	Truncate any digits on the right and it's still a prime.
Right-truncatable primes in base 16	hex 3B9BF319BD51FF (see A237600)	Truncate any hex digits on the right and it's still a prime.
Left-truncatable prime with no 0 digit	357686312646216567629137 (A103443)	Each suffix is prime. Admitting "0", such primes never end.
Primes slicing only into primes	739397 (see A254751)	Prime whose decimal prefixes and postfixes are all prime.
Composites slicing only into primes	73313 (see A254753)	All its decimal prefixes and postfixes are prime.
Smallest of ...		
Sierpinsky numbers	78557 (see A076336)	m is a Sierpinsky number if $m*2^k+1$ is not prime for any k>0.
Riesel numbers (conjectured!)	509203 (see A076337)	m is a Riesel number if $m*2^k-1$ is not prime for any k>0.
Known Brier numbers	3316923598096294713661 (A076335)	Numbers that are both **Riesel** and **Sierpinski**
Non-unique sums of two 4th powers	635318657 (see A003824)	$= 133^4 + 134^4 = 59^4 + 158^4$
Odd abundant numbers	945 (see A005231)	Odd number whose sum of proper divisors exceeds it
Sociable numbers	12496 (see A003416)	Its aliquot sequence terminates with a 5-member cycle
Number of The Beast (Revelation 13:18), **etc...**	666; also the 6x6-th triangular number	and the largest left- and right-truncatable triangular number
Evil numbers (real) and evil integers	are two distinct categories	which must not be confused!

Belphegor numbers B(n)	16661, 1066601, 100666001, •••	prime for n=0, 13, 42, 506, 608, 2472, 2623, 28291, •••
Belphegor prime B(13).	1000000000000066600000000000001	See A232448. Belphegor: one of the seven princes of Hell.
Smallest apocalyptic number	2^{157}, a power of 2 containing digits 666	182687704666362864775460604089535377456991567872
Other Apocalyptic number exponents	157, 192, 218, 220, 222, 224, 226, 243, •••	m such that 2^m contains the sequence of digits "666"
Legion's number of the first kind L_1	666^{666}	It has 1881 decimal digits
Legion's number of the second kind L_2	$666!^{666!}$	It has approximately 1.609941...e1596 digits

Named / notable functions of natural numbers.

Each is also an integer sequence. Their domain {n=1,2,3,...} can be often extended.

Aliquot sum function s(n)	0, 1, 1, 3, 1, 6, 1, 7, 4, 8, 1, 16, 1, 10, 9, •••	s(n) = σ(n)-n. Sum of ***proper*** divisors of n.
Divisor function d(n) ≡ $\sigma_0(n)$	1, 2, 2, 3, 2, 4, 2, 4, 3, 4, 2, 6, 2, 4, 4, 5, •••	Number of ***all*** divisors of n. Also $\boldsymbol{S}_{d\vert n}\{d^0\}$
Euler's totient function φ(n)	1, 1, 2, 2, 4, 2, 6, 4, 6, 4, 10, 4, 12, 6, 8, •••	Number of k's smaller than n and relatively prime to it
Iterated Euler's totient function φ(φ(n))	1, 1, 1, 1, 2, 1, 2, 2, 2, 2, 4, 2, 4, 2, 4, 4, 8, •••	Pops up in counting the primitive roots of n
Factorial function n! = 1*2*3...*n, but 0!=1	1, 1, 2, 6, 24, 120, 720, 5040, 40320, •••	Also: **permutations of ordered sets** of n labeled elements
Hamming weight function Hw(n)	1, 1, 2, 1, 2, 2, 3, 1, 2, 2, 3, 2, 3, 3, 4, 1, 2, •••	Number of 1's in the binary expansion of n
Liouville function λ(n)	1, -1, -1, 1, -1, 1, -1, -1, 1, 1, -1, -1, -1, 1, •••	μ(n)=(-1)^Ω(n). For the *bigomega* function, see below.
Partial sums of **Liouville** function L(n)	0, 1, 0, -1, 0, -1, 0, -1, -2, -1, 0, -1, -2, -3, •••	The **Polya** conjecture, L(n>1)≤0, breaks at **Tanaka**'s number.
Möbius function μ(n)	1, -1, -1, 0, -1, 1, -1, 0, 0, 1, -1, 0, -1, 1, 1, •••	μ(n)=(-1)^ω(n) if n is *squarefree*; else μ(n)=0
omega function ω(n)	0, 1, 1, 1, 1, 2, 1, 1, 1, 2, 1, 2, 1, 2, 2, 1, 1, •••	Number of ***distinct*** prime factors of n.
Omega (or **bigomega**) function Ω(n)	0, 1, 1, 2, 1, 2, 1, 3, 2, 2, 1, 3, 1, 2, 2, 4, 1, •••	Number of ***all*** prime factors of n, with multiplicity.
Primes sequence function prime(n)	2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, •••	A prime number is divisible only by 1 and itself; excluding 1
Primes counting function π(n)	0, 1, 2, 2, 3, 3, 4, 4, 4, 4, 5, 5, 6, 6, 6, 6, 7,•••	π(x) is the number of primes not exceeding x. See A006880.
Primorial function n#	1, 1, 2, 6, 6, 30, 30, 210, 210, 210, 210, •••	Product of all primes not exceeding n
Sigma function σ(n) ≡ $\sigma_1(n)$	1, 3, 4, 7, 6, 12, 8, 15, 13, 18, 12, 28, 14, •••	Sum of ***all*** divisors of n. Also $\boldsymbol{S}_{d\vert n}\{d^1\}$.
Sigma-2 function $\sigma_2(n)$	1, 5, 10, 21, 26, 50, 50, 85, 91, 130, 122, •••	$\boldsymbol{S}_{d\vert n}\{d^2\}$. Sum of squares of all divisors.
Sigma-3 function $\sigma_3(n)$	1, 9, 28, 73, 126, 252, 344, 585, 757, •••	In general, for k ≥ 0, $\sigma_k(n) = \boldsymbol{S}_{d\vert n}\{d^k\}$
Sum of distinct prime factors sopf(n)	0, 2, 3, 2, 5, 5, 7, 2, 3, 7, 11, 5, 13, 9, 8, •••	Example: sopf(12) = sopf(2^2.3) = 2+3 = 5.
Sum of prime factors with repetition sopfr(n)	0, 2, 3, 4, 5, 5, 7, 6, 6, 7, 11, 7, 13, 9, 8, •••	Also said with *multiplicity*. Example: sopfr(12) = 2+2+3 = 7.

Notable integer sequences

(each of them is also an integer-valued function). Here n = 0, 1, 2, ..., unless specified otherwise.

Named sequences

Catalan numbers C(n)	1, 1, 2, 5, 14, 42, 132, 429, 1430, 4862, •••	C(n) = C(2n,n)/(n+1); ubiquitous in number theory

Cullen numbers C_n	1, 3, 9, 25, 65, 161, 385, 897, 2049, •••	$C_n = n.2^n+1$. Very few are prime.
Cullen primes subset of C_n, for n =	1, 141, 4713, 5795, 6611, 18496, 32292, •••	Largest known (Feb 2016): n = 6679881
Euclid numbers 1+prime(n)#	2, 3, 7, 31, 211, 2311, 30031, 510511, •••	1 + (product of first n primes) = 1 + $\boldsymbol{P}_{k=1,n}${prime(k)}
Euler numbers E(n) for n = 0, 2, 4, ...	1, -1, 5, -61, 1385, -50521, 2702765, •••	E.g.f: 1/cosh(z) (even terms only)
Fermat numbers F(n)	3, 5, 17, 257, 655337, 4294967297, •••	F(n) = $2^\wedge(2^n)+1$. Very few are primes.
Fermat primes subset of Fermat numbers F(n)	3, 5, 17, 257, 655337, ••• (? Feb 2016)	F(n) for n=0,1,2,3,4. Also prime(n) for n=2,3,7,55,6543,•••.
Fibonacci numbers F(n)	0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, •••	$F_n = F_{n-1}+F_{n-2}$; $F_0=0$, $F_1=1$
Tribonacci numbers T(n)	0, 0, 1, 1, 2, 4, 7, 13, 24, 44, 81, 149, 274, •••	$T_n = T_{n-1}+T_{n-2}+T_{n-3}$; $T_0=T_1=0$, $T_2=1$
Tetranacci numbers T(n)	0, 0, 0, 1, 1, 2, 4, 8, 15, 29, 56, 108, 208, •••	$T_n = T_{n-1}+T_{n-2}+T_{n-3}+T_{n-4}$; $T_0=T_1=T_2=0$, $T_3=1$
Golomb's | **Silverman**'s sequence, n = 1, 2, ...	1, 2,2, 3,3, 4,4,4, 5,5,5, 6,6,6,6, 7,7,7,7, 8, •••	a(1)=1, a(n)= least number of times n occurs if a(n)≤a(n+1)
Jordan-Polya numbers	1, 2, 4, 6, 8, 12, 16, 24, 32, 36, 48, 64, 72,•••	Can be written as products of factorials
Kolakoski sequence	1, 2, 2, 1, 1, 2, 1, 2, 2, 1, 2, 2, 1, 1, 2, 1, 1, •••	1's and 2's only. Run-lengths match the sequence
Lucas numbers L(n)	2, 1, 3, 4, 7, 11, 18, 29, 47, 76, 123, 199,•••	$L_n = L_{n-1} + L_{n-2}$; $L_0 = 2$, $L_1 = 1$
Markov numbers, n = 1, 2, ...	1, 2, 5, 13, 29, 34, 89, 169, 194, 233, 433, •••	Members of a Markoff triple (x,y,z): $x^2 + y^2 + z^2 = 3xyz$
Mersenne numbers, n = 1, 2, ...	3, 7, 31, 127, 2047, 8191, 131071, •••	$2^{prime(n)}-1$;
Ore's harmonic divisor numbers, n = 1, 2, ...	1, 6, 28, 140, 270, 496, 672, 1638, •••	The harmonic mean of their divisors is integer
Pell numbers P(n)	0, 1, 2, 5, 12, 29, 70, 169, 408, 985, •••	$P_n = 2^*P_{n-1} + P_{n-2}$; $P_0 = 0$, $P_1 = 1$
Pell-Lucas (or **companion Pell**) numbers Q(n)	2, 2, 6, 14, 34, 82, 198, 478, 1154, 2786, •••	$Q_n = 2^*Q_{n-1} + Q_{n-2}$; $Q_0 = 2$, $Q_1 = 2$
Proth numbers	3, 5, 9, 13, 17, 25, 33, 41, 49, 57, 65, •••	They have the form $k.2^m+1$ for some m and some $k < 2^m$.
Proth primes subset of Proth numbers	3, 5, 13, 17, 41, 97, 113, 193, 241, 257, •••	Largest known (Feb 2016): $19249.2^{13018586}+1$
Riesel numbers	509203 (?), •••	Numbers m such that $m.2^k-1$ is not prime for any k>0.
Sierpinsky numbers	78557, 271129, 271577, 322523, •••	Numbers m such that $m.2^k+1$ is not prime for any k>0.
Somos's quadratic recurrence s(n)	1, 1, 2, 12, 576, 1658880, •••	$s(0)=1, s(n)=n.s^2(n-1)$. See **Somos**'s constant
Sylvester's sequence	2, 3, 7, 43, 1807, 3263443, •••	$s_{n+1} = s_n^2 - s_n+1$, with $s_0 = 2$. $\boldsymbol{S}_{k\geq0}\{1/s_k\} = 1$.
Thabit numbers T_n	2, 5, 11, 23, 47, 95, 191, 383, 767, 1535, •••	3.2^n-1.
Thabit primes subset of Thabit numbers for n =	0, 1, 2, 3, 4, 6, 7, 11, 18, 34, 38, 43, 55, •••	As of Feb 2016, only 62 are known, up to n = 11895718.
Wolstenholme numbers	1, 5, 49, 205, 5269, 5369, 266681, •••	Numerators of the reduced rationals $\boldsymbol{S}_{k=1,n}\{1/k^\wedge2\}$
Woodall numbers (**Cullen** of 2nd kind), W_n	1, 7, 23, 63, 159, 383, 895, 2047, 4607, •••	$W_n = n.2^n-1$, n = 1, 2, 3, ... Very few are prime
Other notable integer sequences (unclassified)		

Hungry numbers (they want to eat the **π**)	5, 17, 74, 144, 144, 2003, 2003, 37929, •••	Smallest m such that 2^m contains first m digits of **π**
*Sequences **related to Factorials** (maybe just in some vague conceptual way)*		
Double factorials n!!	1, 1, 2, 3, 8, 15, 48, 105, 384, 945, 3840, •••	0!!=1; for n > 0, n!! = n*(n-2)*(n-4)*...*m, where m ≤ 2
Triple factorials n!!! or $n!^3$, n = 1,2,3,...	1, 1, 2, 3, 4, 10, 18, 28, 80, 162, 280, 880, •••	0!!!=1; for n > 0, n!!! = n*(n-3)*(n-6)*...*m, where m ≤ 3
Exponential factorials a(n)	1, 1, 2, 9, 262144, •••	a(0)=1; for n > 0, a(n) = $n^{a(n-1)}$. Next term has 183231 digits
Factorions in base 10	1, 2, 145, 40585 (that's all)	Equal to the sum of factorials of their dec digits
Factorions in base 16	1, 2, 2615428934649 (that's all)	Equal to the sum of factorials of their hex digits
Hyperfactorials H(n) = $\boldsymbol{P}_{k=1,n}\{k^k\}$	1, 1, 4, 108, 27648, 86400000, •••	H(0) is conventional
Quadruple factorials (2n)!/n!	1, 2, 12, 120, 1680, 30240, 665280, •••	Equals (n+1)!C(n), C(n) being the *Catalan number*
Pickover's tetration superfactorials (n!^^n!)/n!	1, 1, 4, (incredible number of digits), ...	Here the term 'superfactorial' is deprecated
Subfactorials !n = n!*$\boldsymbol{S}_{k=0,n}\{(-1)^k/k!\}$	1, 0, 1, 2, 9, 44, 265, 1854, 14833, •••	Also called *derangements* or *rencontres* numbers
Superfactorials n$ = $\boldsymbol{P}_{k=0,n}\{k!\}$	1, 1, 2, 12, 288, 34560, 24883200, •••	Prevailing definition (see below another one by Pickover)
*Sequences **related to the Hamming weight** function*		
Evil integers (but see also)	0, 3, 5, 6, 9, 10, 12, 15, 17, 18, 20, 23, 24, •••	Have even Hamming weight Hw(n)
Odious numbers	1, 2, 4, 7, 8, 11, 13, 14, 16, 19, 21, 22, 25, •••	Have odd Hamming weight Hw(n)
Primitive odious numbers	1, 7, 11, 13, 19, 21, 25, 31, 35, 37, 41, 47, •••	They are both odd and odious
Pernicious numbers	3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 17, 18, 19, •••	Their Hamming weights Hw(n) are prime.
*Sequences **related to powers***		
Narcissistic | **Armstrong** | Plus perfect numbers	1,2,3,4,5,6,7,8,9, 153, 370, 371, 470, •••	n-digit numbers equal to the sum of n-th powers of their digits
Powers of 2	1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, •••	Also 2-smooth numbers
Perfect powers without duplications	4, 8, 9, 16, 25, 27, 32, 36, 49, 64, 81, 100, •••	Includes any number of the form a^b with a,b > 1
Perfect powers with duplications	4, 8, 9, 16, 16, 25, 27, 32, 36, 49, 64, 64, •••	Repeated entries can be obtained in different ways
Perfect squares	0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, •••	Same as *figurate polygonal square numbers*
Perfect cubes	0, 1, 8, 27, 64, 125, 216, 343, 512, 729, •••	Same as *figurate polyhedral cubic numbers*
Taxicab numbers Ta(n); only six are known	2, 1729, 87539319, 6963472309248, •••	Smallest number equal to a^3+b^3 for n distinct pairs (a,b).
*Sequences **related to divisors**. For functions like σ(n) and s(n) = σ(n)-n, see above.*		
Abundant numbers	12, 18, 20, 24, 30, 36, 40, 42, 48, 54, 56, •••	Sum of proper divisors of n exceeds n: s(n) > n
Primitive abundant numbers	20, 70, 88, 104, 272, 304, 368, 464, 550, •••	All their proper divisors are deficient
odd abundant numbers	945, 1575, 2205, 2835, 3465, 4095, •••	Funny that the smallest one is so large
odd abundant numbers not divisible by 3	5391411025, 26957055125, •••	see also A047802

Composite numbers	4, 8, 9, 10, 14, 15, 16, 18, 20, 21, 22, 24, •••	Have a proper divisor d > 1
highly composite numbers	1, 2, 4, 6, 12, 24, 36, 48, 60, 120, 180, •••	n has more divisors than any smaller number
Cubefree numbers	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, •••	Not divisible by any *perfect cube*.
Deficient numbers	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16, •••	Sum of proper divisors of n is smaller than n: s(n) < n
Even numbers	0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, •••	Divisible by 2
Odd numbers	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, •••	Not divisible by 2
Perfect numbers	6,28,496,8128,33550336,8589869056, •••	Solutions of s(n) = n
semiperfect / pseudoperfect numbers	6, 12, 18, 20, 24, 28, 30, 36, 40, 42, 48, •••	n equals the sum of a subset of its divisors
primitive / irreducible semiperfect numbers	6, 20, 28, 88, 104, 272, 304, 350, 368, •••	Semiperfect with no proper semiperfect divisor
quasiperfect numbers	Not a single one was found so far!	Such that s(n) = n+1 or, equivalently, σ(n) = 2n+1
superperfect numbers	2, 4, 16, 64, 4096, 65536, 262144, •••	Solutions of n = σ(σ(n)) - n
Practical numbers	1, 2, 4, 6, 8, 12, 16, 18, 20, 24, 28, 30, 32, •••	Any smaller number is a sum of distinct divisors of n
Squarefree numbers	1, 2, 3, 5, 6, 7, 10, 11, 13, 14, 15, 17, 19, •••	Not divisible by any *perfect square*. Equivalent to μ(n) ≠ 0
Untouchable numbers	2, 5, 52, 88, 96, 120, 124, 146, 162, 188, •••	They are not the sum of proper divisors of ANY number
Weird numbers	70, 836, 4030, 5830, 7192, 7912, 9272, •••	Abundant, but not semiperfect
Sequences ***related to the*** *aliquot sequence* ***As****(n), $As_0 = n$, $As_{k+1} = s(As_k)$, other than* ***perfect numbers*** *whose aliquot sequence repeats the number itself:*		
Amicable number pairs (n,m)	(220,284); (1184,1210); (2620,2924); •••	m = s(n), n = s(m); As(n) is a cycle of two elements
Aspiring numbers	25, 95, 119, 143, (276? ***maybe!***), •••	n is not perfect, but As(n) eventually reaches a perfect number.
Lehmer five numbers	276, 552, 564, 660, 966	First five n whose As(n) ***might*** be totally a-periodic.
Sociable numbers	12496, 14316, 1264460, 2115324, •••	As(n) is a cycle of C > 2 elements; see also A052470.
Sequences ***related to prime numbers*** *and* ***prime factorizations***		
Achilles numbers	72, 108, 200, 288, 392, 432, 500, 648, •••	Powerful, but not perfect.
Carmichael's pseudoprimes (or **Knödel** C_1)	561, 1105, 1729, 2465, 2821, 6601, •••	Composite n such that a^{n-1}=1 (mod n) for any coprime a<n
D-numbers (**Knödel numbers** C_k for k=3)	9, 15, 21, 33, 39, 51, 57, 63, 69, 87, 93, •••	Composite n such that a^{n-k}=1 (mod n) for any coprime a<n
Euler's pseudoprimes in base 2	341, 561, 1105, 1729, 1905, 2047, 2465, •••	Composite odd n such that $2^{(n-1)/2}$ = ±1 (mod n)
Isolated (single) numbers	2, 4, 6, 12, 18, 23, 30, 37, 42, 47, 53, 60, •••	Either an isolated prime or the mean of twin primes.
Mersenne primes (p = 2,3,5,7,13,17,19,...)	3, 7, 31, 127, 8191, 131071, 524287, •••	Some M(p) = 2^p-1; p prime; Largest known: M(74207281)
Powerful numbers (also **squareful** or **2-full**)	1, 4, 8, 9, 16, 25, 27, 32, 36, 49, 64, 72, •••	Divisible by the squares of all their prime factors.
3-full numbers (also **cubeful**)	1, 8, 16, 27, 32, 64, 81, 125, 128, 216, •••	Divisible by the cubes of all their prime factors.

Prime twins (starting element)	3, 5, 11, 17, 29, 41, 59, 71, 101, 107, •••	For each prime p in this list, p+2 is also a prime
Prime cousins (starting element)	3, 7, 13, 19, 37, 43, 67, 79, 97, 103, 109, •••	For each prime p in this list, p+4 is also a prime
Prime triples (starting element)	5, 11, 17, 41, 101, 107, 191, 227, 311, •••	For each prime p in this list, p+2 and p+6 are also primes
Prime quadruples (starting element)	5, 11, 101, 191, 821, 1481, 1871, 2081, •••	For each prime p in this list, p+2, p+6, p+8 are also primes
Primorial numbers prime(n)#	1, 2, 6, 30, 210, 2310, 30030, 510510, •••	Product of first n primes
Pseudoprimes to base 2 (**Sarrus numbers**)	341, 561, 645, 1105, 1387, 1729, 1905, •••	Composite odd n such that 2^{n-1} = 1 (mod n)
Pseudoprimes to base 3	91, 121, 286, 671, 703, 949, 1105, 1541, •••	Composite odd n such that 3^{n-1} = 1 (mod n)
Semiprimes (also **biprimes**)	4, 6, 9, 10, 14, 15, 21, 22, 25, 26, 33, 34, •••	Products of two primes.
3-smooth numbers	1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 27, 32, •••	b-smooth numbers: not divisible by any prime p > b
Pierpont primes	2, 3, 5, 7, 13, 17, 19, 37, 73, 97, 109, 163, •••	Primes p such that p-1 is 3-smooth
Thabit primes (so far, 62 are known)	2, 5, 11, 23, 47, 95, 191, 383, 6143, •••	Thabit number 3.2^n-1 which are also prime
Wieferich primes	1093, 3511, ••• (next, if any, is > 4.9e17)	Primes p such that 2^(p-1)-1 is divisible by p^2
Wilson primes	5, 13, 563, ••• (next, if any, is > 2e13)	Primes p such that ((p-1)!+1)/p is divisible by p
Wolstenholme primes	16843, 2124679, ••• (next, if any, is > 1e9)	Primes p such that C(2p,p)-2 is divisible by p^4
*Sequences **related to partitions** and **compositions***		
Polite numbers | *staircase* numbers	3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, •••	Can be written as sum of two or more consecutive numbers.
Politeness of a number	0, 0, 1, 0, 1, 1, 1, 0, 2, 1, 1, 1, 1, 1, 3, 0, •••	Number of ways to write n as a sum of consecutive numbers.

Some named | notable binary sequences of "digits" {0,1} or {-1,+1}. An important case is defined by the **Liouville function.**

Baum - Sweet sequence	1,1,0,1,1,0,0,1,0,1,0,0,1,0,0,1,1,0,0 •••	1 if binary(n) contains no block of 0's of odd length
Fredholm-Rueppel sequence	1,1,0,1,0,0,0,1,0,0,0,0,0,0,0,1,0,0,0, •••	1 at positions 2^k. Binary exp. of **Kempner-Mahler** number
Fibonacci words; binary:	0, 01, 01 0, 010 01, 01001 010, ...	Like Fibonacci recurrence, using string concatenation
Infinite **Fibonacci** word	0100101001001010010100100010 •••	Infinite continuation of the above
Rabbit sequence; binary (click here for dec):	1, 10, 10 1, 101 10, 10110 101, •••	Similar, but with different starting strings
Rabbit number; binary:	.1101011011010110101 •••	Converted to decimal, gives the rabbit constant
Jeffrey's sequence	101100001111111100000000000 •••	Does not have any limit mean density of 1's
Golay - Rudin - Shapiro sequence	+1,+1,+1,-1,+1,+1,-1,+1,+1,+1,+1,-1 •••	b(n)=(-1)^$\mathbf{S}_k\{n_k n_{k+1}\}$, with n_i denoting the i-th binary digit of n
Thue - Morse sequence t_n	0,1,1,0,1,0,0,1,1,0,0,1,0,1,1,0,1,0,0 •••	t_n = 1 if binary(n) has odd parity (number of ones)

Combinatorial numbers such as Pascal-Tartaglia triangle binomials, Stirling, Lah and Franel numbers

Binomial coefficients C(n,m) = n!/(m!(n-m)!) (ways to pick m among n labeled elements); C(n,m)=0 if m<0 or m>n; C(n,0)=1; C(n,1)=n; C(n,m)=C(n,n-m):

m = 2, n = 4,5,6,...	6, 10, 15, 21, 28, 36, 45, 55, 66, 78, 91, •••	n(n-1)/2; shifted triangular numbers
m = 3, n = 6,7,8,...	20, 35, 56, 84, 120, 165, 220, 286, 364, •••	n(n-1)(n-2)/3!; shifted tetrahedral numbers
m = 4, n = 8,9,10,...	70, 126, 210, 330, 495, 715, 1001, 1365, •••	n(n-1)(n-2)(n-3)/4!; for n < 2m, use C(n,n-m)
m = 5, n = 10,11,12...	252, 462, 792, 1287, 2002, 3003, 4368, •••	n(n-1)(n-2)(n-3)(n-4)/5!
m = 6, n = 12,13,14,...	924, 1716, 3003, 5005, 8008, 12376, •••	n(n-1)(n-2)(n-3)(n-4)(n-5)/6! = $n^{(6)}$/6!
m = 7, n = 14,15,16...	3432, 6435, 11440, 19448, 31824, •••	$n^{(7)}$/7! Use C(n,m)=C(n,n-m) to cover all cases up to n=14
Central binomial coefficients C(2n,n) = (2n)!/n!^{2}	1, 2, 6, 20, 70, 252, 924, 3432, 12870, •••	C(2n,n) = $\boldsymbol{S}_{k=0,n}${C^2(n,k)}: **Franel** number of order 2
Entringer numbers E(n,k), k = 0,1,...,n (triangle)	1; 0,1; 0,1,1; 0,1,2,2; 0,2,4,5,5; •••	Counts of particular types of permutations
Euler zig-zag numbers A(n)	1, 1, 1, 2, 5, 16, 61, 272, 1385, 7936, •••	≡ alternating permutation numbers. E.g.f: tan(z/2+π/4)
Franel numbers of order 3	1, 2, 10, 56, 346, 2252, 15184, 104960, •••	$\boldsymbol{S}_{k=0,n}${C^3(n,k)}
Lah numbers L(n,m) (unsigned); signed L(n,m) = $(-1)^n$L(n,m); They expand rising factorials in terms of falling factorials and vice versa. L(n,1) = n!		
m = 2, n = 2,3,4,...	1, 6, 36, 240, 1800, 15120, 141120, •••	
m = 3, n = 3,4,5,...	1, 12, 120, 1200, 12600, 141120, •••	General formula: L(n,m)=C(n,m)(n-1)!/(m-1)!
m = 4, n = 4,5,6,...	1, 20, 300, 4200, 58800, 846720, •••	
Stirling numbers of the first kind c(n,m), unsigned; signed s(n,m) = $(-1)^{n-m}$c(n,m); number of permutations of n distinct elements with m cycles. s(n,0) = 1.		
m = 1, n = 1,2,3,...	1, 1, 2, 6, 24, 120, 720, 5040, 40320, •••	(n-1)!
m = 2, n = 2,3,4,...	1, 3, 11, 50, 274, 1764, 13068, 109584, •••	a(n+1)=n*a(n)+(n-1)!
m = 3, n = 3,4,5,...	1, 6, 35, 225, 1624, 13132, 118124, •••	
m = 4, n = 4,5,6,...	1, 10, 85, 735, 6769, 67284, 723680, •••	A definition of s(n,m):
m = 5, n = 5,6,7,...	1, 15, 175, 1960, 22449, 269325, •••	$x^{(n)}$ = x(x-1)(x-2)...(x-(n-1)) = $\boldsymbol{S}_{m=0,n}${s(n,m).x^m}
m = 6, n = 6,7,8,...	1, 21, 322, 4536, 63273, 902055, •••	See also OEIS A008275
m = 7, n = 7,8,9,...	1, 28, 546, 9450, 157773, 2637558, •••	
m = 8, n = 8,9,10,...	1, 36, 870, 18150, 357423, 6926634, •••	
m = 9, n = 9,10,11,...	1, 45, 1320, 32670, 749463, 16669653, •••	
Stirling numbers of the second kind S(n,m); number of partitions of n distinct elements into m non-empty subsets. S(n,1) = 1. By convention, S(0,0) = 1.		
m = 2, n = 2,3,4,...	1, 3, 7, 15, 31, 63, 127, 255, 511, 1023, •••	$2^{(n-1)}$-1
m = 3, n = 3,4,5,...	1, 6, 25, 90, 301, 966, 3025, 9330, •••	
m = 4, n = 4,5,6,...	1, 10, 65, 350, 1701, 7770, 34105, •••	A definition of S(n,m):
m = 5, n = 5,6,7,...	1, 15, 140, 1050, 6951, 42525, 246730, •••	x^n = $\boldsymbol{S}_{m=0,n}${S(n,m).$x^{(m)}$}

m = 6, n = 6,7,8,...	1, 21, 266, 2646, 22827, 179487, •••	See also OEIS A008277
m = 7, n = 7,8,9,...	1, 28, 462, 5880, 63987, 627396, •••	
m = 8, n = 8,9,10,...	1, 36, 750, 11880, 159027, 1899612, •••	
m = 9, n = 9,10,11,...	1, 45, 1155, 22275, 359502, 5135130, •••	

Counting (enumeration) sequences relevant to finite sets

*Enumerations of **set-related** objects, assuming **labeled elements**. Set cardinality is n=0,1,2,..., unless specified otherwise.*

Subsets (cardinality of the power set)	1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, •••	2^n; also mappings into a binary set
Derangements (subfactorials) !n	1, 0, 1, 2, 9, 44, 265, 1854, 14833, •••	n!***S**$_{k=0,n}${(-1)^k/k!} Permutations leaving no element in-place
Endomorphisms	1, 1, 4, 27, 256, 3125, 46656, 823543, •••	n^n. Operators, mappings (functions) of a set into itself
Binary relations | Digraphs with self-loops	1, 2, 16, 512, 65536, 33554432, •••	2^(n^2). This counts also *'no relation'*
Reflexive relations | Irreflexive relations	1, 1, 4, 64, 4096, 1048576, 1073741824, •••	2^(n*(n-1)). The two types have the same count
Symmetric relations	1, 2, 8, 64, 1024, 32768, 2097152, •••	2^(n*(n+1)/2). Any self loop is optional
Symmetric & Reflexive relations	1, 1, 2, 8, 64, 1024, 32768, 2097152, •••	2^(n*(n-1)/2). Also Symmetric & Irreflexive
Transitive relations	1, 2, 13, 171, 3994, 154303, 9415189, •••	
Preorder relations (quasi-orderings)	1, 1, 4, 29, 355, 6942, 209527, 9535241, •••	Transitive & Reflexive
Partial-order relations (posets)	1, 1, 3, 19, 219, 4231, 130023, 6129859, •••	
Total-preorder rels | Weakly ordered partitions	1, 1, 3, 13, 75, 541, 4683,47293,545835, •••	**Ordered Bell** numbers, or **Fubini** numbers
Total-order relations | Bijections	1, 1, 2, 6, 24, 120, 720, 5040, 40320, •••	n! Also **permutations** | *orders of symmetry groups* S_n
Equivalence relations | Set partitions	1, 1, 2, 5, 15, 52, 203, 877, 4140, 21147, •••	**Bell** numbers B(n)
Groupoids | Closed Binary Operations (CBOs)	1, 1, 16, 19683, 4294967296, •••	n^n^2 = $(n\text{^}n)^n$
Abelian groupoids	1, 1, 8, 729, 1048576, 30517578125, •••	Commutative CBOs. n^(n(n+1)/2)
Non-associative Abelian groupoids	0, 0, 2 , 666, 1047436, •••	Commutative but non-associative CBOs.
Non-associative non-Abelian groupoids	0, 0, 6, 18904, 4293916368, •••	Non-commutative & non-associative CBOs.
Semigroups	1, 1, 8, 113, 3492, 183732, 17061118, •••	Associative CBOs
Non-Abelian semigroups	0, 0, 2, 50, 2352, 153002, 15876046, •••	Associative but non-commutative CBOs
Abelian semigroups	1, 1, 6, 63, 1140, 30730, 1185072, •••	Associative and commutative CBOs
Monoids	0, 1, 4, 33, 624, 20610, 1252032, •••	Associative CBOs with an identity element
Non-Abelian monoids	0, 0, 0, 6, 248, 13180, 1018692, ...	Associative but non-commutative CBOs with identity
Abelian monoids	0, 1, 4, 27, 376, 7430, 233340, •••	Associative & commutative CBOs with identity element

Groups	0, 1, 2, 3, 16, 30, 480, 840, 22080, 68040, •••	Associative CBOs with identity and invertible elements
Abelian groups (commutative)	0, 1, 2, 3, 16, 30, 360, 840, 15360, 68040, •••	
Non-Abelian groups	0, 0, 0, 0, 0, 0, 120, 0, 6720, 0, 181440, 0, ...	Difference of the previous two
The following items in this section count the **isomorphism classes** of the specified objects on n labeled nodes		
Binary relations	1, 2, 10, 104, 3044, 291968, 96928992, •••	This counts also *'no relation'*
*Enumerations of **set-related** objects, assuming **unlabeled elements** (counting **types of objects**). Set size | order is n=0,1,2,..., unless specified otherwise.*		
Compositions c(n)	1, 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, •••	For n>0, c(n)=2^(n-1)
Partitions p(n)	1, 1, 2, 3, 5, 7, 11, 15, 22, 30, 42, 56, 77, •••	
Partitions into distinct parts (strict partitions)	1, 1, 1, 2, 2, 3, 4, 5, 6, 8, 10, 12, 15, 18, •••	Also *Partitions into odd parts*
The following items in this section count the **isomorphism classes** of the specified objects on n unlabeled nodes		
Binary relations	1, 1, 5, 52, 1522, 145984, 48464496, •••	This counts also *'no relation'*
Groupoids (more data are needed!)	1, 1, 10, 3330, 178981952, •••	Closed Binary Operations (CBOs)
Abelian groupoids	1, 1, 4, 129, 43968, 254429900, •••	Commutative CBOs
Non-associative Abelian groupoids	0, 0, 1, 117, 43910, •••	Commutative but non-associative CBOs
Non-associative non-Abelian groupoids	0, 0, 4, 3189, 178937854, •••	Non-commutative non-associative CBOs
Semigroups	1, 1, 5, 24, 188, 1915, 28634, 1627672, •••	Associative CBOs
Non-Abelian semigroups	0, 0, 2, 12, 130, 1590, 26491, 1610381, •••	Associative but non-commutative CBOs
Abelian semigroups	1, 1, 3, 12, 58, 325, 2143, 17291, 221805, •••	Associative & commutative CBOs
Monoids	0, 1, 2, 7, 35, 228, 2237, 31559, 1668997 •••	Associative CBOs with identity element
Non-Abelian monoids	0, 0, 0, 2, 16, 150, 1816, 28922, ...	Associative but non-commutative CBOs with identity
Abelian monoids	0, 1, 2, 5, 19, 78, 421, 2637, •••	Associative & commutative CBOs with identity
Groups	0, 1, 1, 1, 2, 1, 2, 1, 5, 2, 2, 1, 5, 1, 2, 1, 14, •••	Associative CBOs with identity and inverses
Abelian groups (commutative)	0, 1, 1, 1, 2, 1, 1, 1, 3, 2, 1, 1, 2, 1, 1, 1, 5, 1, •••	Factorizations of n into prime powers
Non-Abelian groups	0, 0, 0, 0, 0, 0, 1, 0, 2, 0, 1, 0, 3, 0, 1, 0, 9, •••	

Counting (enumeration) sequences relevant to finite graphs

*Enumerations of **graph-related** objects, assuming **labeled vertices**. Number of vertices is n=1,2,3,..., unless specified otherwise.*		
Simple graphs with n vertices	1, 2, 8, 64, 1024, 32768, 2097152, •••	$2^{n(n-1)/2}$
Free trees with n vertices	1, 1, 3, 16, 125, 1296, 16807, 262144, •••	n^{n-2} (Cayley formula)
Rooted trees with n vertices	1, 2, 9, 64, 625, 7776, 117649, 2097152, •••	n^{n-1}

*Enumerations of **graph-related** objects, assuming **unlabeled vertices** (i.e., counting **types of objects**). Number of vertices is n=1,2,3,..., unless specified otherwise.*		
Simple connected graphs with n vertices	1, 1, 2, 6, 21, 112, 853, 11117, 261080, •••	isomorphism classes
Free trees with n vertices	1, 1, 1, 2, 3, 6, 11, 23, 47, 106, 235, 551, •••	isomorphism classes
Rooted trees with n vertices	1, 2, 4, 9, 20, 48, 115, 286, 719, 1842, •••	isomorphism classes
Selected sequences of rational numbers		
***Bernoulli** numbers $B_0 = 1$, $B_1 = -1/2$, $B_{2k+1} = 0$ for k>1, $B_n = \delta_{n,0}$ - $\mathbf{S}_{k=0,(n-1)}\{C(n,k)B_k/(n-k+1)\}$; $x/(e^x-1)$ = $\mathbf{S}_{k\geq0}\{B_n x^n/n!\}$; Example: $B_{10} = 5/66$*		
B_n = N/D; n = 2,4,6,...	N: 1, -1, 1, -1, 5, -691, 7, -3617, 43867, •••	D: 6, 30, 42, 30, 66, 2730, 6, 510, 798, •••
***Harmonic** numbers H_n = $\mathbf{S}_{k=1,n}\{1/k\}$, in reduced form. Example: $H_5 = 137/60$.*		
H_n = N/D; n = 1,2,3,...	N: 1, 3, 11, 25, 137, 49, 363, 761, 7129, •••	D: 1, 2, 6, 12, 60, 20, 140, 280, 2520, •••
Other:		
Rationals ≤1, sorted by denominator/numerator	$^1/_1$, $^1/_2$, $^1/_3$, $^2/_3$, $^1/_4$, $^3/_4$, $^1/_5$, $^2/_5$, $^3/_5$, $^4/_5$, $^1/_6$, •••	Take the inverse values for rationals ≥ 1
Farey fractions F_n (example for order n=5)	$^0/_1$, $^1/_5$, $^1/_4$, $^1/_3$, $^2/_5$, $^1/_2$, $^3/_5$, $^2/_3$, $^3/_4$, $^4/_5$, $^1/_1$, ...	F_1={ $^0/_1$,$^1/_1$ }; higher n: interpolate ($^a/_c$,$^b/_d$) → $^{a+b}/_{c+d}$
Stern - Brocot sequence (example n=4)	$^1/_1$, $^1/_2$, $^2/_1$, $^1/_3$, $^2/_3$, $^3/_2$, $^3/_1$, $^1/_4$, $^2/_5$, $^3/_5$, $^3/_4$, ...	Wraps up the binary **Stern - Brocot tree**
Some Diophantine solutions and their sequences, such as those related to compositions of powers		
Pythagorean triples (a,b,c), $a^2 + b^2 = c^2$	(3,4,5) (5,12,13) (7,24,25) (8,15,17)	(9,40,41) (11,60,61) (12,35,37) (13,84,85) (16,63,65) •••
Pythagorean quadruples, $a^2 + b^2 + c^2 = d^2$	(1,2,2,3) (2,3,6,7) (4,4,7,9) (1,4,8,9)	(6,6,7,11) (2,6,9,11) (10,10,23,27) (7,14,22,23) ...
Pythagorean quintuples	(1,2,4,10,11) (1,2,8,10,13) ...	etc; there is an infinity of them in each category
Markov triples, $x^2 + y^2 + z^2 = 3xyz$	(1,1,1) (1,1,2) (1,2,5) (1,5,13) (2,5,29)	(1,13,34) (1,34,89) (2,29,169) (5,13,194) (1,89,233) ...
Brown number pairs (m,n), $n!+1 = m^2$	(5, 4) (11, 5) (71, 7)	Erdös conjectured that there are no others
Selected sequences of Figurate Numbers (formulas are adjusted so that n=1 gives always 1)		
Polygonal (2D). See also A090466 (numbers which are polygonal) and A090467 (numbers which are not).		
Triangular numbers T_n	1, 3, 6, 10, 15, 21, 28, 36, 45, 55, 66, •••	n(n+1)/2
Square numbers, squares	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, •••	n*n
Pentagonal numbers	1, 5, 12, 22, 35, 51, 70, 92, 117, 145, •••	n(3n-1)/2
Hexagonal numbers	1, 6, 15, 28, 45, 66, 91, 120, 153, 190, •••	n(2n-1); also **cornered hexagonal numbers**
Heptagonal numbers	1, 7, 18, 34, 55, 81, 112, 148, 189, 235, •••	n(5n-3)/2
Octagonal numbers	1, 8, 21, 40, 65, 96, 133, 176, 225, 280, •••	n(3n-2)
Square-triangular numbers	1, 36, 1225, 41616,1413721,48024900, •••	$[[(3+2\sqrt{2})^n-(3-2\sqrt{2})^n]/(4\sqrt{2})]^2$; both triangular and square

*Pyramidal (2D). $P_n^{(r)}$ = n(n+1)[n(r-2)+(5-r)]/6 for r-gonal base = partial sum of r-gonal numbers. For r=3, see **tetrahedral numbers** Te_n (below)*		
Square pyramidal numbers, r=4	1, 5, 14, 30, 55, 91, 140, 204, 285, 385, •••	n(n+1)(2n+1)/6. The only ones that are squares: 1, 4900
Pentagonal pyramidal numbers, r=5	1, 6, 18, 40, 75, 126, 196, 288, 405, 550, •••	$n^2(n+1)/2$
Hexagonal pyramidal numbers, r=6	1, 7, 22, 50, 95, 161, 252, 372, 525, 715, •••	n(n+1)(4n-1)/6. Also called **greengrocer's numbers**
Heptagonal pyramidal numbers, r=7	1, 8, 26, 60, 115, 196, 308, 456, 645, 880, •••	n(n+1)(5n-2)/6
Octagonal pyramidal numbers r=8	1, 9, 30, 70, 135, 231, 364, 540, 765, 1045, •••	n(n+1)(5n-2)/6
***Polyhedral** (3D)*		
Tetrahedral numbers Te_n (pyramidal with r=3)	1, 4, 10, 20, 35, 56, 84, 120, 165, 220, •••	n(n+1)(n+2)/6. The only Te_n squares: 1, 4, 19600
Cubic numbers, cubes	1, 8, 27, 64, 125, 216, 343, 512, 729, •••	n^3
Octahedral numbers	1, 6, 19, 44, 85, 146, 231, 344, 489, 670, •••	$n(2n^2+1)/3$.
Icosahedral numbers	1, 12, 48, 124, 255, 456, 742, 1128, •••	$n(5n^2-5n+2)/2$.
Dodecahedral numbers	1, 20, 84, 220, 455, 816, 1330, 2024, •••	n(3n-1)(3n-2)/2.
Platonic numbers	1, 4, 6, 8, 10, 12, 19, 20, 27, 35, 44, 48, •••	Union of the above sequences.
Pentatopic (or pentachoron) numbers	1, 5, 15, 35, 70, 126, 210, 330, 495, •••	n(n+1)(n+2)(n+3)/24
***Centered polygonal** (2D)*		
Centered triangular numbers	1, 4, 10, 19, 31, 46, 64, 85, 109, 136, •••	$(3n^2-3n+2)/2$. Click for the primes subset: •••
Centered square numbers	1, 5, 13, 25, 41, 61, 85, 113, 145, 181, •••	$2n^2-2n+1$. Click for the primes subset: •••
Centered pentagonal numbers	1, 6, 16, 31, 51, 76, 106, 141, 181, 226, •••	$(5n^2-5n+2)/2$. Click for the primes subset: •••
Centered hexagonal numbers	1, 7, 19, 37, 61, 91, 127, 169, 217, 271, •••	$n^3- (n-1)^3$ = 3n(n-1)+1; also **hex numbers**
Centered heptagonal numbers	1, 8, 22, 43, 71, 106, 148, 197, 253, •••	$(7n^2-7n+2)/2$
Centered octagonal numbers	1, 9, 25, 49, 81, 121, 169, 225, 289, •••	$(2n-1)^2$; squares of odd numbers
***Centered polyhedral** (3D)*		
Centered tetrahedral numbers	1, 5, 15, 35, 69, 121, 195, 295, 425, 589, •••	$(2n+1)(n^2-n+3)/3$
Centered cube numbers	1, 9, 35, 91, 189, 341, 559, 855, 1241, •••	$(2n-1)(n^2-n+1)$
Centered octahedral numbers	1, 7, 25, 63, 129, 231, 377, 575, 833, •••	$(2n-1)(2n^2-2n+3)/3$

Selected geometry constants

Named and various notable geometry constants		
Area doubling (Pythagora's) constant	1.414 213 562 373 095 048 801 688 •••	√2. Area-doubling **scale factor**
Area tripling (Theodorus's) constant	1.732 050 807 568 877 293 527 446 •••	√3. Area-tripling **scale factor**

Volume doubling (Delos) constant	1.259 921 049 894 873 164 767 210 •••	$2^{1/3}$. Volume-doubling **scale factor**
Volume tripling constant	1.442 249 570 307 408 382 321 638 •••	$3^{1/3}$. Volume-tripling **scale factor**
Minimum area of a constant-width figure	0.704 770 923 010 457 972 467 598 •••	(pi - sqrt(3))/2 for width = 1. See Reuleaux triangle
Moser's worm constant	0.232 239 210 ••• ?	Area of smallest region accomodating any curve of length 1
Square-drill constant	0.987 700 390 736 053 460 131 999 •••	Portion of square area covered by a *Reuleaux drill*
Universal parabolic constant, log(1+√2)+√2	2.295 587 149 392 638 074 034 298 ••• #t	= asinh(1)+√2. Arc-to-latus_rectum ratio in any parabola.
Gravitoid constant	1.240 806 478 802 799 465 254 958 •••	2√(2/(3√3)). Width/Depth of **gravitoid curve** or **gravidome**
***Notable plane angles** in radians and degrees*		
Magic angle φ = acos(1/√3) = atan(√2)$_m$	0.955 316 618 124 509 278 163 857 •••	Degrees: 54.735 610 317 245 345 684 622 999 •••
Complementary magic angle $\varphi'_m = \pi/2 - \varphi_m$	0.615 479 708 670 387 341 067 464 •••	Degrees: 35.264 389 682 754 654 315 377 000 ...
Tetrahedral angle $\theta_m = 2\varphi = \pi$ - acos(1/3)$_m$	1.910 633 236 249 018 556 327 714 •••	Degrees: 109.471 220 634 490 691 369 245 999 •••
Complemetary tetrahedral angle $\theta'_m = \pi - \theta_m$	1.230 959 417 340 774 682 134 929 •••	Degrees: 70.528 779 365 509 308 630 754 000 ...
***Notable solid angles** in steradians*		
Square on a sphere with sides of 1 radian	0.927 689 475 322 313 640 795 613 •••	4*asin(sin(1/2)^2)
Square on a sphere with sides of 1 degree	3.046 096 875 119 366 637 825 ••• e-4	4 asin(sin(α/2)sin(β/2)); α = β = 1 degree = π/180
Spherical triangle with sides of 1 radian	0.495 594 895 733 964 750 698 857 •••	See Huilier's formula
Spherical triangle with sides of 1 degree	1.319 082 346 912 923 487 761 ... e-4	See Huilier's formula
Sphere and hyper-spheres in n = 2, 3, 4, ..., 10 Euclidean dimensions		
2D-Disk | Circle.		
Area / Radius^2 = V(2) = π	3.141 592 653 589 793 238 462 643 ••• #t	Area of a disk with unit radius
Radius / Area$^{1/2}$ = Rv(2) = 1/√π	0.564 189 583 547 756 286 948 079 •••	Radius of a sphere with unit area
Circumference / Radius^2 = S(2) = 2π	6.283 185 307 179 586 476 925 286 •••	
Radius / Circumference = Rs(2) = 1/(2π)	0.159 154 943 091 895 335 768 883 •••	Radius of a disk with unit circumference
3D-Sphere, the Queen of all bodies.		
Volume / Radius^3 = V(3) = 4π/3	4.188 790 204 786 390 984 616 857 •••	Volume of a sphere with unit radius
Radius / Volume$^{1/3}$ = Rv(3) = (3/(4π))$^{1/3}$	0.620 350 490 899 400 016 668 006 •••	Radius of a sphere with unit volume
Surface / Radius^2 = S(3) = 4π	12.566 370 614 359 172 953 850 573 •••	See also surface indices.
Radius / Surface$^{1/2}$ = Rs(3) = 1/(4π)$^{1/2}$	0.282 094 791 773 878 143 474 039 •••	Radius of a sphere with unit surface
nD-Hyperspheres in n>3 dimensions (see disk and sphere for n≤3): V(n) = Volume/Radius^n and Rv(n) = Radius/Volume$^{1/n}$ =1/ V(n)$^{1/n}$.		

$V(4) = \pi^2/2$	4.934 802 200 544 679 309 417 245 •••	Rv(4) = 0.670 938 266 965 413 916 222 789 ...
$V(5) = 8\pi^2/15$, the largest of them all	5.263 789 013 914 324 596 711 728 •••	Rv(5) = 0.717 365 200 794 964 260 816 144 ...
$V(6) = \pi^3/6$	5.167 712 780 049 970 029 246 052 •••	Rv(6) = 0.760 531 030 982 050 466 116 446 ...
$V(7) = 16\pi^3/105$	4.724 765 970 331 401 169 596 390 •••	Rv(7) = 0.801 050 612 642 752 206 249 327 ...
$V(8) = \pi^4/24$	4.058 712 126 416 768 218 185 013 •••	Rv(8) = 0.839 366 184 571 988 024 335 065 ...
$V(9) = 32\pi^4/945$	3.298 508 902 738 706 869 382 106 ...	Rv(9) = 0.875 808 485 845 386 610 603 654 ...
$V(10) = \pi^5/120$	2.550 164 039 877 345 443 856 177 ...	Rv(10) = 0.910 632 588 621 402 549 723 631 ...
nD-Hyperspheres in n>3 dimensions (see disk and sphere for n≤3): $S(n) = \text{Surface}/\text{Radius}^{(n-1)}$ and $Rs(n) = \text{Radius}/\text{Surface}^{1/(n-1)} = 1/S(n)^{1/(n-1)}$.		
$S(4) = 2\pi^2$	19.739 208 802 178 717 237 668 981 •••	Rs(4) = 0.370 018 484 153 678 110 702 808 ...
$S(5) = 8\pi^2/3$	26.318 945 069 571 622 983 558 642 •••	Rs(5) = 0.441 502 208 724 281 499 461 813 ...
$S(6) = \pi^3$	31.006 276 680 299 820 175 476 315 •••	Rs(6) = 0.503 164 597 143 259 315 750 866 ...
$S(7) = 16\pi^3/15$, the largest of all of them	33.073 361 792 319 808 187 174 736 •••	Rs(7) = 0.558 153 445 139 655 576 810 770 ...
$S(8) = \pi^4/3$	32.469 697 011 334 145 745 480 110 •••	Rs(8) = 0.608 239 384 088 163 635 224 747 ...
$S(9) = 32\pi^4/105$	29.686 580 124 648 361 824 438 958 ...	Rs(9) = 0.654 530 635 654 477 183 429 699 ...
$S(10) = \pi^5/12$	25.501 640 398 773 454 438 561 775 ...	Rs(10) = 0.697 773 792 101 567 380 147 922 ...
***Cones**: a cone has a polar angle and subtends a solid angle which is a fraction of the full solid angle of 4π*		
Solid angle fractions f cut-out by cones with a given polar angle θ, $f = (1 - \cos\theta)/2$. The subtended solid angle in steradians is therefore **4π*f**		
$\theta = \theta'_m$, the complementary tetrahedral angle	0.333 333 333 333 333 333 333 333 •••	1/3 exact
θ = 60 degrees	0.25	1/4 exact
θ = 1 radian	0.229 848 847 065 930 141 299 531 •••	(1-cos(1))/2
$\theta = \varphi_m$, the magic angle	0.211 324 865 405 187 117 745 425 •••	(1-√(1/3))/2; also the Knuth's constant
θ = 45 degrees	0.146 446 609 406 726 237 799 577 ...	(1-√(1/2))/2
$\theta = \varphi'_m$, the complementary magic angle	0.091 751 709 536 136 983 633 785 ...	(1-√(2/3))/2
θ = 30 degrees	0.066 987 298 107 780 676 618 138 ...	(1-√(3/4))/2
θ = 15 degrees	0.017 037 086 855 465 856 625 128 ...	(1-sqrt((1+√(3/4))/2))/2
θ = 0.5 degrees (base disk of 1 degree diameter)	1.903 846 791 435 563 132 241 ...e-5	Steradians: 2.392 444 437 413 785 769 530 ...e-4
Polar angles θ of cones cutting a given fraction f of the full solid angle, θ = acos(1-2f)		
f = (Φ-1)/Φ, where Φ is the golden-ratio	1.332 478 864 985 030 510 208 009 •••	Degrees: 76.345 415 254 024 494 986 936 602 •••
f = 1/3	1.230 959 417 340 774 682 134 929 •••	The complemetary tetrahedral angle. Degrees: 70.528 779 •••

f = 1/4	1.047 197 551 196 597 746 154 214 •••	π/3. Degrees: 60
f = 0.1 (10%)	0.643 501 108 793 284 386 802 809 •••	Degrees: 36.869 897 645 844 021 296 855 612 ...
f = 0.01 (1%)	0.200 334 842 323 119 592 691 046 ...	Degrees: 11.478 340 954 533 572 625 029 817 ...
f = 1e-6 (1 ppm)	0.002 000 000 333 333 483 333 422 ...	Degrees: 0.114 591 578 124 766 407 153 079 ...
***Perimeters of ellipses** with major semi-axis 1, and minor semi-axis b (area = πab). Special cases: b=0 ... **flat ellipse**, b = 1 ... **circle**.*		
b = 1/Φ, where Φ is the golden-ratio	5.154 273 178 025 879 962 492 835 ...	**Golden ellipse**
b = 0.613 372 647 073 913 744 075 540 ...	π+2 = mean of flat ellipse and circle	**Mid-girth ellipse** differs from golden ellipse by < 1%
b = 1/√2	5.402 575 524 190 702 010 080 698 ...	**Balanced ellipse** (interfocal_distance = minor_axis)
b = 1/2, the **midway ellipse**	4.844 224 110 273 838 099 214 251 ...	b = 1/3: 4.454 964 406 851 752 743 376 500 ...
b = 3/4	5.525 873 040 177 376 261 321 396 ...	b = 2/3: 5.288 479 863 096 863 263 777 221 ...
b = 1/4	4.289 210 887 578 417 111 478 604 ...	b = 1/5: 4.202 008 907 937 800 188 939 832 ...
b = 1/6	4.150 013 265 005 047 157 825 880 ...	b = 1/7: 4.116 311 284 366 438 220 003 847 ...
b = 1/8	4.093 119 575 024 437 585 615 711 ...	b = 1/9: 4.076 424 191 956 689 482 335 178 ...
b = 1/10	4.063 974 180 100 895 742 557 793 ...	b = 0.01: 4.001 098 329 722 651 860 747 464 ...
b = 0.001	4.000 015 588 104 688 244 610 756 ...	b = 0.0001: 4.000 000 201 932 695 375 419 076 ...
***Surface-to-Volume indices**: σ_3 = Surface/Volume$^{2/3}$ (i.e., surface per unit volume)*		
For **CLOSED 3D bodies**, sorted by surface index value:		
Sphere	4.835 975 862 049 408 922 150 900 •••	$(36\pi)^{1/3}$; **the absolute minimum** for closed bodies
Icosahedron, regular	5.148 348 556 199 515 646 330 812 •••	$(5\sqrt{3})/[5(3+\sqrt{5})/12]^{2/3}$; a Platonic solid
Dodecahedron, regular	5.311 613 997 069 083 669 796 666 •••	$(3\sqrt{(25+10\sqrt{5})})/[(15+7\sqrt{5})/4]^{2/3}$; a Platonic solid
Closed cylinder with smallest σ_3	5.535 810 445 932 085 257 290 411 •••	$3*(2\pi)^{1/3}$; Height = Diameter. **Cannery constant**.
Octahedron, regular	5.719 105 757 981 619 442 544 453 •••	$(2\sqrt{3})/[(\sqrt{2})/3]^{2/3}$; a Platonic solid
Cube	6.000 exact	A Platonic solid
Cone (closed) with smallest σ_3	6.092 947 785 379 555 603 436 316 •••	$6*(\pi/3)^{1/3}$; Height=BaseDiameter*√2. **Frozon cone constant**.
Tetrahedron, regular	7.205 621 731 056 016 360 052 792 •••	$(\sqrt{3})/[(\sqrt{2})/12]^{2/3}$; a Platonic solid
For **OPEN 3D bodies**, sorted by surface index value:		
Open cylinder (tube)	3.690 540 297 288 056 838 193 607 •••	$2*(2\pi)^{1/3}$, to be multiplied by $(\text{Length/Diameter})^{1/3}$
Open cone with smallest σ_3	4.188 077 948 623 138 128 725 597 •••	$3*\sqrt{3}*(\pi/6)^{1/3}$; Height = BaseRadius*√2. **TeePee constant**.
Half-closed cylinder (cup/pot) with smallest σ_3	4.393 775 662 684 569 789 060 427 •••	$3\pi^{1/3}$; Height = Radius. **Cooking pot constant**.

***Perimeter-to-Area indices** for **CLOSED 2D figures**, σ_2 = Perimeter/Area$^{1/2}$ (i.e., perimeter per unit area), sorted by value:*		
Disk	3.544 907 701 811 032 054 596 334 •••	2√π; this is *the absolute minimum* for all figures
Regular heptagon	3.672 068 807 445 035 069 314 605 ...	Regular n-gon: σ_2 = 2*sqrt(n*tan(π/n)) = *minimum* for all n-gons
Regular hexagon	3.722 419 436 408 398 395 764 874 ...	2*sqrt(6*tan(π/6)); *the minimum* for all hexagons.
Regular pentagon	3.811 935 277 533 869 372 492 013 ...	2*sqrt(5*tan(π/5)); *the minimum* for all pentagons.
Square	4.000 exact	Also the minimum for disk wedges, attained for angle of 2 rad.
Equilateral triangle	4.559 014 113 909 555 283 987 126 •••	6/√(√3); *the minimum* for all triangles
Packing ratios (monodispersed)		
Densest packing ratios Δ_n in the n-dimensional Euclidean space by (n-1)-dimensional spheres. Δ_1 = 1. Values for n>3 are [very likely] conjectures. Also listed are the powers h(n) = $(\gamma_n)^n$ of Hermite constants $\gamma_n = 4(\Delta_n / V(n))^{2/n}$, where V(n) is the unit hypersphere volume.		
Δ_2 = π/(2√3), **Kepler constant** for disks	0.906 899 682 117 089 252 970 392 •••	h(n) = 4/3. See Disks-packing.
Δ_3 = π/(3√2), **Kepler constant** for spheres	0.740 480 489 693 061 041 169 313 •••	hcp / fcc lattices (see below). h(n) = 2. See Spheres-packing.
Δ_4 = π^2/16, **Korkin-Zolotarev** constant	0.616 850 275 068 084 913 677 155 •••	h(n) = 4.
Δ_5 = (π^2√2)/30, **Korkin-Zolotarev** constant	0.465 257 613 309 258 635 610 504 •••	h(n) = 8.
Δ_6 = π^3(√3)/144	0.372 947 545 582 064 939 563 477 •••	h(n) = 64/3.
Δ_7 = π^3/105	0.295 297 873 145 712 573 099 774 •••	h(n) = 64.
Δ_8 = π^4/384	0.253 669 507 901 048 013 636 563 •••	h(n) = 256.
Densest random packing ratios in the n-dimensional Euclidean space by (n-1)-dimensional spheres. Known only approximately.		
2D disks, densest random	0.772 ± 0.002	Empirical & theoretical
3D spheres, densest random	0.634 ± 0.007	Empirical & theoretical
Atomic packing factors (**APF**) of crystal lattices (3D).		
Hexagonal close packed (hcp)	0.740 480 489 693 061 041 169 313 •••	and face-centered cubic (fcc). π/(3√2).
Body-centered cubic (bcc)	0.680 174 761 587 831 693 972 779 •••	(π√3)/8.
Simple cubic	0.523 598 775 598 298 873 077 107 •••	π/6. In practice found only in polonium.
Diamond cubic	0.340 087 380 793 915 846 986 389 •••	(π√3)/16. This is the smallest possible APF.
Platonic solids data, except those already listed above, such as surface-to-volume indices		
***Platonic solids: Tetrahedron**, regular, 4 vertices, 6 edges, 4 faces, 3 edges/vertex, 3 edges/face, 3 faces/vertex, 0 diagonals.*		
Volume / edge^3	0.117 851 130 197 757 920 733 474 •••	(√2)/12
Surface / edge^2	1.732 050 807 568 877 293 527 446 •••	√3; see also surface indices.

Height / edge	0.816 496 580 927 726 032 732 428 •••	(√6)/3
Angle between an edge and a face	0.955 316 618 124 509 278 163 857 •••	**magic angle** φ_m (see above)
Dihedral angle (between adjacent faces)	1.230 959 417 340 774 682 134 929 •••	**complementary tetrahedral angle** θ'_m (see above)
Tetrahedral angle (vertex-center-vertex)	1.910 633 236 249 018 556 327 714 •••	θ_m (see above)
Circumscribed sphere radius / edge	0.612 372 435 695 794 524 549 321 •••	Circumradius = (√6)/4, congruent with vertices
Midsphere radius / edge	0.353 553 390 593 273 762 200 422 •••	Midradius = 1/√8, tangent to edges
Inscribed sphere radius / edge	0.204 124 145 231 931 508 183 107 •••	Inradius = (√6)/12, tangent to faces; Circumradius/Inradius = 3
Vertex solid angle	0.551 285 598 432 530 807 942 144 •••	acos(23/27) steradians
Polar angle of circumscribed cone	0.615 479 708 670 387 341 067 464 •••	**complementary magic angle** φ'_m (see above)
Solid angle of circumscribed cone	1.152 985 986 532 130 094 749 141 ...	2π(1-sqrt(2/3)) steradians
Hamiltonian cycles	3	Acyclic Hamiltonian paths: 0
***Platonic solids: Octahedron**, regular, 6 vertices, 12 edges, 8 faces, 4 edges/vertex, 3 edges/face, 4 faces/vertex, 3 diagonals of length √2.*		
Volume / edge^3	0.471 404 520 791 031 682 933 896 •••	(√2)/3
Surface / edge^2	3.464 101 615 137 754 587 054 892 •••	2√3; see also surface indices.
Dihedral angle (between adjacent faces)	1.910 633 236 249 018 556 327 714 •••	**tetrahedral angle** (see above)
Circumscribed sphere radius / edge	0.707 106 781 186 547 524 400 844 •••	Circumradius = 1/√2, congruent with vertices
Midsphere radius / edge	0.5 exact	Midradius, tangent to edges
Inscribed sphere radius / edge	0.408 248 290 463 863 016 366 214 •••	1/√6; Tangent to faces. Circumradius/Inradius = √3
Vertex solid angle	1.359 347 637 816 487 748 385 570 •••	4 asin(1/3) steradians
Polar angle of circumscribed cone	0.785 398 163 397 448 309 615 660 •••	π/4 = atan(1); Degrees: 45 exact
Solid angle of circumscribed cone	1.840 302 369 021 220 229 909 405 ...	2π(1-sqrt(1/2)) steradians
Hamiltonian cycles	16	Acyclic Hamiltonian paths: 24 (8 span each body diagonal)
***Platonic solids: Cube**, or Hexahedron, 8 vertices, 12 edges, 6 faces, 3 edges/vertex, 4 edges/face, 3 faces/vertex, 4 diagonals of length √3.*		
Body diagonal / edge	1.732 050 807 568 877 293 527 446 •••	√3. Diagonal of a cube with unit side
Body diagonal / Face diagonal	1.224 744 871 391 589 049 098 642 •••	sqrt(3/2)
Angle between body diagonal and an edge	0.955 316 618 124 509 278 163 857 •••	**magic angle** φ_m (see above)
Angle between body and face diagonals	0.615 479 708 670 387 341 067 464 •••	**complementary magic angle** φ'_m (see above)
Circumscribed sphere radius / edge	0.866 025 403 784 438 646 763 723 •••	Circumradius = (√3)/2, congruent with vertices
Midsphere radius / edge	0.707 106 781 186 547 524 400 844 •••	Midradius = 1/√2, tangent to edges

Inscribed sphere radius / edge	0.5 exact	Circumradius/Inradius = √3
Vertex solid angle	1.570 796 326 794 896 619 231 321 •••	π/2 steradians
Polar angle of circumscribed cone	0.955 316 618 124 509 278 163 857 •••	**magic angle** φ_m (see above)
Solid angle of circumscribed cone	2.655 586 578 711 150 775 737 130 •••	2π(1-sqrt(1/3)) steradians
Hamiltonian cycles	6	Acyclic Hamiltonian paths: 24 (6 span each body diagonal)
Platonic solids: Icosahedron*, regular, 12 vertices, 30 edges, 20 faces, 5 edges/vertex, 3 edges/face, 5 faces/vertex, 6 main diagonals, 30 short diagonals.*		
Volume / edge^3	2.181 694 990 624 912 373 503 822 •••	$5\Phi^2/6$ = 5(3 + √5)/12, where Φ is the **golden ratio**
Surface / edge^2	8.660 254 037 844 386 467 637 231 •••	5√3 = 10*A010527. See also surface indices.
Dihedral angle (between adjacent faces)	2.411 864 997 362 826 875 007 846 •••	2.atan(Φ^2); Degrees: 138.189 685 104 221 401 934 142 083 ...
Main diagonal / edge	1.902 113 032 590 307 144 232 878 •••	2*Circumradius = ξΦ = sqrt(2+Φ), ξ being the **associate of** Φ.
Circumscribed sphere radius / edge	0.951 056 516 295 153 572 116 439 •••	Circumradius = ξΦ/2 = sqrt((5+sqrt(5))/8), ξ as above.
Midsphere radius / edge	0.809 016 994 374 947 424 102 293 •••	Midradius = Φ/2, tangent to edges
Inscribed sphere radius / edge	0.755 761 314 076 170 730 480 133 •••	Inradius = Φ^2/(2√3) = sqrt(42+18√5)/12
Vertex solid angle	2.634 547 026 044 754 659 651 303 •••	2π - 5asin(2/3) steradians
Polar angle of circumscribed cone	1.017 221 967 897 851 367 722 788 •••	atan(Φ); Degrees: 58.282 525 588 538 994 675 ...
Solid angle of circumscribed cone	2.979 919 307 985 462 371 739 387 ...	2π(1-sqrt((5-√5)/10)) steradians
Hamiltonian cycles	1280	Acyclic Hamiltonian paths: 22560 (6*720 + 30*608)
Platonic solids: Dodecahedron*, regular, 20 vertices, 30 edges, 12 faces, 3 edges/vertex, 5 edges/face, 3 faces/vertex; 10 main, 30 secondary, and 60 short diagonals.*		
Volume / edge^3	7.663 118 960 624 631 968 716 053 •••	$(5\Phi^3)/(2\xi^2)$ = (15+7√5)/4, ξ being the **associate of** Φ
Surface / edge^2	20.645 728 807 067 603 073 108 143 •••	15Φ/ξ = 3.sqrt(25+10√5); see also surface indices.
Dihedral angle (between adjacent faces)	2.034 443 935 795 702 735 445 577 •••	2atan(Φ); Degrees: 116.565 051 177 077 989 351 572 193 ...
Main diagonal / edge	2.080 251 707 688 814 708 935 335 ...	2*Circumradius = Φ√3
Circumscribed sphere radius / edge	1.401 258 538 444 073 544 676 677 •••	Circumradius = Φ (√3)/2 = (sqrt(15)+sqrt(3))/4
Midsphere radius / edge	1.309 016 994 374 947 424 102 293 •••	Midradius = Φ^2/2, tangent to edges
Inscribed sphere radius / edge	1.113 516 364 411 606 735 194 375 •••	Inradius = Φ^2/(2ξ) = sqrt(250+110√5)/20
Vertex solid angle	2.961 739 153 797 314 967 874 090 •••	π - atan(2/11) steradians
Polar angle of circumscribed cone	1.205 932 498 681 413 437 503 923 •••	acos(1/(Φ√3)); Degrees: 69.094 842 552 110 700 967 ...
Solid angle of circumscribed cone	4.041 205 995 440 192 430 566 404 ...	2π(1-1/(Φ√3)) steradians
Hamiltonian cycles	30	Acyclic Hamiltonian paths: ? coming soon

Selected geometry sequences

Constructible regular polygons	1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 16, 17, 20, •••	2^m*k, where k is any product of distinct Fermat primes.
Non-constructible regular polygons	7, 9, 11, 13, 14, 18, 19, 21, 22, 23, 25, 26, •••	Complement of the above sequence.

Constants related to number-theoretical functions

Riemann zeta function $\zeta(s) = \mathbf{S}_{k\geq 0}\{k^{-s}\} = (1/\Gamma(s)).\mathbf{I}_{x=0,\infty}\{(x^{s-1})/(e^x-1\} = \mathbf{P}_{prime\ p}\{1/(1-p^{-s})\}$. *It has a single pole at s = 1 (simple, with residue 1).* $\mathbf{L}_{s\to\infty}\{\eta(s)\} = 1$

Exact values & trivial zeros (n is integer >0)	$\zeta(0) = -0.5$, $\zeta(-1) = \zeta(-13) = -1/12$	$\zeta(-2n) = 0$, $\zeta(-n) = -B_{n+1}/(n+1)$. B_n are **Bernoulli** numbers
$\zeta(-1/2) = -\zeta(3/2)/(4\pi)$	-0.207 886 224 977 354 566 017 306 •••	$\zeta(-3/2)$ = -0.025 485 201 889 833 035 949 542 •••
$\zeta(+1/2)$	-1.460 354 508 809 586 812 889 499 •••	$\zeta(+3/2)$ = 2.612 375 348 685 488 343 348 567 •••
$\zeta(2) = \pi^2/6$. $\zeta(2n) = \|B_{2n}\|(2\pi)^{2n}/(2(2n)!)$	1.644 934 066 848 226 436 472 415 ••• #t	$\zeta(3)$ = 1.202 056 903 159 594 285 399 738 ••• #t (**Apéry**'s)
$\zeta(4) = \pi^4/90$	1.082 323 233 711 138 191 516 003 ••• #t	$\zeta(5)$ = 1.036 927 755 143 369 926 331 365 •••
$\zeta(6) = \pi^6/945$	1.017 343 061 984 449 139 714 517 ••• #t	$\zeta(7)$ = 1.008 349 277 381 922 826 839 797 •••
$\zeta(8) = \pi^8/9450$	1.004 077 356 197 944 339 378 685 ••• #t	$\zeta(9)$ = 1.002 008 392 826 082 214 417 852 •••
$\zeta(10) = \pi^{10}/93555$	1.000 994 575 127 818 085 337 145 ••• #t	$\zeta(11)$ = 1.000 494 188 604 119 464 558 702 •••
$\zeta(12) = \pi^{12}(691/638512875)$	1.000 246 086 553 308 048 298 637 ••• #t	$\zeta(13)$ = 1.000 122 713 347 578 489 146 751 •••
$\zeta($ **i** $)$, real and imaginary parts:	0.003 300 223 685 324 102 874 217 •••	- **i** 0.418 155 449 141 321 676 689 274 •••
Local extrema along the negative real axis (location in central column, value in last column). Remember that $\zeta(-2n) = 0$ for any integer n > 0		
1-st Maximum	-2.717 262 829 204 574 101 570 580 •••	0.009 159 890 119 903 461 840 056 •••
1-st minimum	-4.936 762 108 594 947 868 879 358 ...	-0.003 986 441 663 670 750 431 710 ...
2-nd Maximum	-7.074 597 145 007 145 734 335 798 ...	0.004 194 001 958 045 626 474 146 ...
2-nd minimum	-9.170 493 162 785 828 005 353 111 ...	-0.007 850 880 657 688 685 582 151 ...
3-rd Maximum	-11.241 212 325 375 343 510 874 637 ...	0.022 730 748 149 745 047 522 814 ...
3-rd minimum	-13.295 574 569 032 520 384 733 960 ...	-0.093 717 308 522 682 935 623 713 ...
4-th Maximum	-15.338 729 073 648 281 821 158 316 ...	0.520 589 682 236 209 120 459 027 ...
4-th minimum	-17.373 883 342 909 485 264 559 273 ...	-3.743 566 823 481 814 727 724 234 ...
5-th Maximum	-19.403 133 257 176 569 932 332 310 ...	33.808 303 595 651 664 653 888 821 ...
5-th minimum	-21.427 902 249 083 563 532 039 024 ...	-374.418 851 865 762 246 500 180 ...
Imaginary parts of first **nontrivial roots** (for more, see OEIS Wiki). Note: they all have real parts +0.5. Trivial roots are the even negative integers		
1st root	14.134 725 141 734 693 790 457 251 •••	2nd root: 21.022 039 638 771 554 992 628 479 •••
3rd root	25.010 857 580 145 688 763 213 790 •••	4th root: 30.424 876 125 859 513 210 311 897 •••

5th root:	32.935 061 587 739 189 690 662 368 •••	6th root: 37.586 178 158 825 671 257 217 763 ...
7th root:	40.918 719 012 147 495 187 398 126 ...	8th root: 43.327 073 280 914 999 519 496 122 ...
9th root:	48.005 150 881 167 159 727 942 472 ...	10th root: 49.773 832 477 672 302 181 916 784 ...
Expansion about the pole at s = 1: $\zeta(s) = 1/(s-1) + \boldsymbol{S}_{n=0,\infty}\{(-1)^n\gamma_n(s-1)^n/n!\}$, where $\gamma_0 \equiv \gamma$ is the **Euler-Mascheroni constant**, and γ_n, n > 0, are the Stieltjes constants		
Stieltjes constant γ_1	-0.072 815 845 483 676 724 860 586 •••	In general: $\gamma_n = \boldsymbol{L}_{m\to\infty}\{\boldsymbol{S}_{k=1,m}\{\log^n(k)/k\}-\ln^{n+1}(m)/(n+1)\}$
γ_2	-0.009 690 363 192 872 318 484 530 •••	γ_3 = -0.002 053 834 420 303 345 866 160 •••
γ_4	0.002 325 370 065 467 300 057 468 •••	γ_5 = -0.000 793 323 817 301 062 701 753 •••
γ_6	-0.000 238 769 345 430 199 609 872 •••	γ_7 =-0.000 527 289 567 057 751 046 074 •••
Derivative: $\zeta'(s) \equiv d\,\zeta(s)/ds = \boldsymbol{S}_{n=1,\infty}\{\log(n)/n^s\}$. In what follows, A is the **Glaisher-Kinkelin** constant and γ the **Euler** constant		
ζ'(-1)	-0.165 421 143 700 450 929 213 919 •••	1/12 - log(A); called sometimes **Kinkelin constant**
ζ'(-1/2)	-0.360 854 339 599 947 607 347 420 •••	
ζ'(0)	-0.918 938 533 204 672 741 780 329 •••	-log(2π)/2
ζ'(+1/2)	-3.922 646 139 209 151 727 471 531 •••	ζ(1/2)(π+2.γ+6.log(2)+2.log(π))/4
ζ'(2)	-0.937 548 254 315 843 753 702 574 •••	π^2(γ + log(2π) - 12.A)/6
ζ'(**i**) , real and imaginary parts:	0.083 406 157 339 240 564 143 845 •••	- **i** 0.506 847 017 167 569 081 923 677 •••
Dirichlet eta function $\eta(s) = -\boldsymbol{S}_{k>0}\{(-1)^k k^{-s}\} = (1 - 2^{1-s})\zeta(s) = (1/\Gamma(s)).\boldsymbol{I}_{x=0,\infty}\{(x^{s-1})/(e^x+1\}$. $\boldsymbol{L}_{s\to\infty}\{\eta(s)\} = 1$. *Below,* B_n *are* ***Bernoulli*** *numbers.*		
Exact values & trivial zeros (n is integer >0)	η(0) = 1/2, η(-1) = 1/4, η(1) = log(2)	$\eta(-2n) = 0$, $\eta(-n) = (2^{n+1}-1)B_{n+1}/(n+1)$
η(1) = log(2)	0.693 147 180 559 945 309 417 232 ••• #t	Note that at s=1, ζ(s) is not defined, while η(s) is smooth
$\eta(2) = \pi^2/12$	0.822 467 033 424 113 218 236 207 ••• #t	$\eta(2n) = \pi^{2n}[(2^{2n-1}-1)/(2n)!].\vert B_{2n}\vert$
η(3) = 3.ζ(3)/4	0.901 542 677 369 695 714 049 803 ••• #t	Note that ζ(3) is the **Apéry**'s constant
$\eta(4) = \pi^4$ (7/720)	0.947 032 829 497 245 917 576 503 ••• #t	$\eta(6) = \pi^6$ (31/30240), $\eta(8) = \pi^8$ (127/1209600), etc
η(**i**) , real and imaginary parts:	0.532 593 181 763 096 166 570 965 •••	**i** 0.229 384 857 728 525 892 457 886 •••
Derivative: $\eta' \equiv d\,\eta(s)/ds = \boldsymbol{S}_{k=1,\infty}\{(-1)^k \log(k).k^{-s}\} = 2^{1-s}\log(2)\zeta(s)+(1-2^{1-s})\zeta'(s)$		
η'(-1)	0.265 214 370 914 704 351 169 348 •••	3.log(A) - log(2)/3 - 1/4
η'(0)	0.225 791 352 644 727 432 363 097 •••	log(sqrt(π/2))
η'(1)	0.159 868 903 742 430 971 756 947 •••	log(2)(γ - log(√2))
η'(2)	0.101 316 578 163 504 501 886 002 •••	π^2(γ + log(π) + log(4) - 12.log(A))/12
η'(**i**) , real and imaginary parts:	0.235 920 948 050 440 923 634 079 •••	- **i** 0.069 328 260 390 357 410 164 243 •••
Dedekind eta function $\eta(\tau) = q\hat{}(1/24)*\boldsymbol{P}_{n>0}\{(1-q\hat{}n)\}$*, where q=exp(2 π τ* ***i****) is the 'nome'. This function is a modular form.*		

η(x **i**) maximum: Location x_{max}	0.523 521 700 017 999 266 800 534 •••	For real x>0, η(x **i**)>0 is real, η(0)=0, and $\lim_{x\to\infty}$η(x **i**)=0
η(x **i**) maximum: Value at x_{max}	0.838 206 031 992 920 559 691 418 •••	In this complex-plane cut, the maximum is unique
η(**i**)	0.768 225 422 326 056 659 002 594 •••	Γ(1/4) /(2 $\pi^{3/4}$); one of four values found by Ramanujan:
η(**i** /2) = $2^{1/8}$ η(**i**)	0.837 755 763 476 598 057 912 365 •••	Γ(1/4) / ($2^{7/8}$ $\pi^{3/4}$)
η(2 **i**) = η(**i**) / $2^{3/8}$	0.592 382 781 332 415 885 290 363 •••	Γ(1/4) / ($2^{11/8}$ $\pi^{3/4}$)
η(4 **i**) = (√2 -1)$^{1/4}$ η(**i**) / $2^{13/16}$	0.350 919 807 174 143 236 430 229 •••	(√2 -1)$^{1/4}$ Γ(1/4) / ($2^{29/16}$ $\pi^{3/4}$)

Constants related to selected complex functions. Notes: y(z) is a stand-in for the function. *Integral* is a stand-in for anti-derivative, up to a constant.

*Exponential exp(z) = **S**$_{k\geq 0}${z^k/k!}; exp(y+z) = exp(y)exp(z); integer n: exp(n.z) = exp ^{n}(z); exp(n.z.**i**) = cos(n.z)+sin(n.z).**i** = (cos(z)+sin(z).**i**)^n.*		
More: exp(z) equals its own derivative. Right-inverse funtions Log(z,K)=log(z)+2πK**i**; left-inverse function log(z). Diff.eq. y' = y.		
exp(1) = e, the Euler number	2.718 281 828 459 045 235 360 287 ••• #t	Other: exp(πk **i**)=(-1)^k for any integer k, etc.; see e spin-offs.
atan(e)	1.218 282 905 017 277 621 760 461 •••	For real x>0, y=atan(e).x is tangent to exp(x), kissing it at x=1
exp(±**i**) = cos(1) ± **i** sin(1) = cosh(**i**) ± sinh(**i**)	0.540 302 305 868 139 717 400 936 •••	±**i** 0.841 470 984 807 896 506 652 502 ••• #t
Some fixed points of exp(z): exp(z) = z, or z = log(z)+2πK **i**. They form a denumerable set, but none is real-valued.		
$z_{\pm 1}$, relative to K=0. Lambert W_0(-1)	0.318 131 505 204 764 135 312 654 •••	±**i** 1.337 235 701 430 689 408 901 162 •••
$z_{\pm 3}$, relative to K=±1. Equals $W_{\pm 1}$(-1)	2.062 277 729 598 283 884 978 486 •••	±**i** 7.588 631 178 472 512 622 568 923 •••
$z_{\pm 5}$, relative to K=±2. Equals $W_{\pm 2}$(-1)	2.653 191 974 038 697 286 601 106 •••	±**i** 13.949 208 334 533 214 455 288 918 •••
Some fixed points of -exp(z): -exp(z) = z, or z = log(-z)+2πK **i**. They form a denumerable set, but only one is real-valued.		
z_0, real, relative to K=0. Equals -W_0(1)	-0.567 143 290 409 783 872 999 968 •••	-z(0) is a solution of exp(-x) = x in ***R***; **Omega constant**
$z_{\pm 2}$, relative to K=±1. Equals -$W_{\pm 1}$(1)	1.533 913 319 793 574 507 919 741 •••	±**i** 4.375 185 153 061 898 385 470 906 •••
$z_{\pm 4}$, relative to K=±2. Equals -$W_{\pm 2}$(1)	2.401 585 104 868 002 884 174 139 •••	±**i** 10.776 299 516 115 070 898 497 103 •••
*Natural logarithm log(z)≡Log(z,0). For integer K, Log(z,K)=log(z)+2πK **i** is a multivalued right inverse of exp(z). Conventional cut is along negative real axis.*		
More: log(1/z)=-log(z); log(1) = 0, log(± **i**) = (π/2)**i**, log(**e**) = 1. Derivative = 1/z. Integral = z(log(z)-1). Inverse = exp(z). Diff.eqs: y'z = 1, y'exp(y) = 1, y''+(y')^2 = 0.		
atan(1/e) = π/2 - atan(e)	0.352 513 421 777 618 997 470 859 •••	For real x, y=c.x kisses exp(x) at [1,e] when c=atan(1/e).
Trigonometric (or circular) functions trig(z): sin(z)=(e^{iz}-e^{-iz})/2, cos(z)=(e^{iz}+e^{-iz})/2, tan(z)=sin(z)/cos(z), csc(z)=1/sin(z), sec(z)=1/cos(z), cot(z)=1/tan(z).		
More: sin(z),cos(z) are **entire**. *trig* functions are periodic with period 2π: trig(z+2πK)=trig(z), but tan(z),cot(z) have a period of π. *Identity*: cos^2(z)+sin^2(z) = 1.		
sin(±1); sine	± 0.841 470 984 807 896 506 652 502 ••• #t	sin(0)=0, sin(π/2)=1, sin(π)=0, sin(3π/2)=-1.
sin(±**i**)	±**i** 1.175 201 193 643 801 456 882 381 ••• #t	In general: sin(-z)=-sin(z), sin(z+π)=-sin(z), sin(**i**z) = **i**.sinh(z).
csc(±1); cosecant	± 1.188 395 105 778 121 216 261 599 •••	csc(π/2)=1, csc(3π/2)=-1.
csc(±**i**)	-(±**i**) 0.850 918 128 239 321 545 133 842 •••	In general: csc(-z)=-csc(z), csc(z+π)=-csc(z), csc(**i**z) = -**i**.csch(z).

cos(±1); cosine	0.540 302 305 868 139 717 400 936 •••	cos(0)=1, cos(π/2)=0, cos(π)=-1, cos(3π/2)=0.
cos(±**i**)	1.543 080 634 815 243 778 477 905 ••• #t	In general: cos(-z)=cos(z), cos(z+π)=-cos(z), cos(**i**z)=cosh(z).
tan(±1); tangent	± 1.557 407 724 654 902 230 506 974 •••	tan(0)=0, tan(±π/2)=±∞, tan(π)=0, tan(3π/2)=-(±∞).
tan(± **i**)	± **i** 0.761 594 155 955 764 888 119 458 •••	In general: tan(-z)=-tan(z), tan(z+π)=tan(z), tan(**i**z)=**i**.tanh(z).
Inverse trigonometric functions asin(z), acos(z), atan(z), acsc(z), asec(z), acot(z). In general: atrig(z) = Atrig(z,0).		
More: *Atrig*(z,K) are multivalued right inverses of *trig*(z), integer K being the branch index. *Atrig*(z,K) = *atrig*(z)+πK for *trig* ≡ tan, cot; otherwise *Atrig*(z,K) = *atrig*(z)+2πK.		
asin(±**i**) = ±**i**.log(1+sqrt(2))	± **i** 0.881 373 587 019 543 025 232 609 ••• #t	asin(0) = 0, asin(±1) = ±π/2.
acos(±**i**) = π/2 - asin(±**i**)	In general, acos(z) = π/2 - asin(z)	acos(0) = π/2, acos(1) = 0, acos(-1) = π.
atan(±1) = ±π/4	± 0.785 398 163 397 448 309 615 660 •••	atan(0) = 0, atan(±**i**) = ±∞, atan(z) = -**i**.atanh(**i**z).
Hyperbolic functions trigh(z): sinh(z)=(e^z-e^{-z})/2, cosh(z)=(e^z+e^{-z})/2, tanh(z)=sinh(z)/cosh(z), csch(z)=1/sinh(z), sech(z)=1/cosh(z), coth(z)=1/tanh(z).		
More: sinh(z),cosh(z) are **entire**. *trigh* functions are periodic with period 2π**i**: trigh(z+2π**i**K)=trig(z), but tanh(z),coth(z) have a period of π**i**. *Identity*: $\cosh^2$(z)-$\sinh^2$(z) = 1.		
sinh(±1) = (e - e^{-1})/2	±1.175 201 193 643 801 456 882 381 ••• #t	sinh(0)=0
sinh(±**i**) = ±**i**.sin(1)	±**i** 0.841 470 984 807 896 506 652 502 ••• #t	In general: sinh(-z)=-sinh(z), sinh(**i**z)=**i**.sin(z)
cosh(±1) = (e + e^{-1})/2	1.543 080 634 815 243 778 477 905 ••• #t	cosh(0)=1
cosh(±**i**) = cos(1)	0.540 302 305 868 139 717 400 936 •••	In general: cosh(-z)=cos(z), cosh(**i**z)=cos(z)
tanh(±1)	± 0.761 594 155 955 764 888 119 458 •••	tanh(0)=0. $\boldsymbol{L}_{x\to\pm\infty}${tanh(x)}=±1.
tanh(± **i**)	± **i** 1.557 407 724 654 902 230 506 974 •••	In general: tanh(-z)=-tanh(z), tanh(**i**z) = **i**.tan(z)
Inverse hyperbolic functions asinh(z), acosh(z), atanh(z), acsch(z), asech(z), acoth(z). In general: atrigh(z) = Atrigh(z,0).		
More: *Atrigh*(z,K) are multivalued right inverses of *trigh*(z), K being the branch index. *Atrigh*(z,K) = *atrigh*(z)+π**i**K for *trigh* ≡ tanh, coth; otherwise *Atrigh*(z,K) = *atrigh*(z)+2π**i**K.		
asinh(±1) = ±log(1+sqrt(2))	±0.881 373 587 019 543 025 232 609 •••	asinh(0) = 0, asinh(± **i**) = ± **i** π/2.
acosh(± **i**) = asinh(1) ± **i** π/2	acosh(0) = (π/2) **i**	acosh(1) = 0, acosh(-1) = π.
atanh(±**i**) = ± **i**.π/4 = ±log((1+**i**)/(1-**i**))/2	± **i** 0.785 398 163 397 448 309 615 660 •••	atanh(0) = 0, atanh(±1) = ±∞, atanh(z) = -**i**.atan(**i**z).
Logarithmic integral li(z) = $\boldsymbol{I}_{t=0,z}${1/log(t)}, x ≥ 0; Li(x) = li(x)-li(2) = $\boldsymbol{I}_{t=2,x}${1/log(t)}; $\boldsymbol{L}_{x\to+\infty}$(li(x)/(x/log(x))) = 1. For li(e), see Ei(1).		
li(2); for real x>0, Imag(li(x))=0	1.045 163 780 117 492 784 844 588 •••	More: li(0)=0, li(1)=-∞, li(+∞)=+∞, Re(li(-∞))=-∞
li(-1); upper sign applies just above the real axis	0.073 667 912 046 425 485 990 100 •••	± **i** 3.422 733 378 777 362 789 592 375 •••
li(±**i**)	0.472 000 651 439 568 650 777 606 •••	± **i** 2.941 558 494 949 385 099 300 999 •••
Unique positive real root of li(z), z = μ	1.451 369 234 883 381 050 283 968 •••	**Ramanujan-Soldner's constant** (or just **Soldner's**)
Derivative of li(z) at its root z = μ	2.684 510 350 820 707 652 502 382 •••	Equals 1.0/log(μ)
Unique negative real root of Real(li(z))	-2.466 408 262 412 678 075 197 103 •••	Real(li(z)) has three real roots: μ, 0, and this one

Imaginary value of li(z) at the above point	± **i** 3.874 501 049 312 873 622 370 969 •••	Upper/lower sign applies just above/below the real axis
Solution of x*li(x) = 1 for real x	1.715 597 325 769 518 883 130 074 ...	
Fixed points of li(z): solutions li(z) = z other than z_0=0.		
$z_{\pm 1}$, main-branch attractors of li(z)	1.878 881 747 908 123 091 969 486 ...	±**i** 2.065 922 202 370 662 188 988 104 ...
Fixed points of -li(z): solutions li(z) = -z.		
Solution of x+li(x) = 0 for real x>1	1.162 128 219 976 088 745 102 790 ...	This is a repulsor of the li(z) mapping!
Solution of x+real(li(x)) = 0 for real x<1, x≠0	0.647 382 347 652 898 263 175 288 ...	For real x<1, y=0, li(x+iy) is regular in x but discontinuous in y
Complex main-branch attractors of -li(z)	1.584 995 337 729 709 022 596 984 ...	±**i** 4.285 613 025 032 867 139 156 436 ...
*Exponential integral $E_1(z)$ = $\boldsymbol{I}_{t=1,\infty}$\{exp(-zt)/t\}; multivalued, has a cut along the negative real axis. E_1((0+)+**i**(0±))=∞, E_1((0-)+**i**.(0±))=∞ -(±).π, E_1(∞)=0*		
E_1(1)	0.219 383 934 395 520 273 677 163 •••	Equals (Gompertz constant)/e
E_1(±**i**)	-0.337 403 922 900 968 134 662 646 •••	-(±) **i** 0.624 713 256 427 713 604 289 968 •••
E_1(-1+**i**.0±)	-1.895 117 816 355 936 755 466 520 •••	-(±) π.**i**
Unique **real root** r of real(E_1(x))	-0.372 507 410 781 366 634 461 991 •••	imag(E_1(r+**i**.(0±)) = -(±)π
*Exponential integral Ei(z) = -$\boldsymbol{I}_{t=-z,\infty}$\{exp(-t)/t\}; multivalued, has a cut along the negative real axis. Ei(0+)=-∞, Ei(0-)=-∞ -π.**i**, Ei(-∞)=0, Ei(+∞)=+∞, Ei(±∞.**i**)=±π*		
Ei(1) = -real(E_1(-1))	1.895 117 816 355 936 755 466 520 •••	Equals li(e)
Ei(±**i**)	0.337 403 922 900 968 134 662 646 •••	(±) **i** 2.516 879 397 162 079 634 172 675 ...
Ei(-1+**i**.0±)	-0.219 383 934 395 520 273 677 163 •••	±π.**i**
Unique **real root** of Ei(x)	0.372 507 410 781 366 634 461 991 •••	Equals log(μ); μ being the **Ramanujan-Soldner's constant**
Sine integral Si(z) = $\boldsymbol{I}_{t=0,z}$\{sin(t)/t\}; Si(-z)=-Si(z); Si(conj(z))=conj(Si(z)); Si(0)=0; For real x>0: maxima at x=(2k-1)π, minima at x=2kπ, k=1,2,3,...		
More: This covers also the hyperbolic sine integral Shi(z) = Si(**i***z). Si(z) and Shi(z) are both entire complex functions.		
Si(1) ≡ Shi(-**i**)	0.946 083 070 367 183 014 941 353 •••	$\boldsymbol{S}_{k\geq 0}$\{$(-1)^k$/((2k+1)!(2k+1))\} = 1/(1!1)-1/(3!3)+1/(5!5)-1/(7!7)+
Si(**i**) ≡ Shi(1)	**i** 1.057 250 875 375 728 514 571 842 •••	$S_{k\geq 0}$\{1/((2k+1)!(2k+1))\} = 1/(1!1)+1/(3!3)+1/(5!5)+...
Si(π), absolute maximum for real z	1.851 937 051 982 466 170 361 053 •••	The **Gibbs constant**, equal to $\boldsymbol{I}_{x=0,pi;}$\{sin(x)/x\}.
Si(2π), first local minimum for real z	1.418 151 576 132 628 450 245 780 •••	With growing real x, Si(x) exhibits ripples converging to π/2.
Solutions of Si(z) = π/2 for real z:	1st: 1.926 447 660 317 370 582 022 944 ...	2nd: 4.893 835 952 616 601 801 621 684 ..., etc.
Cosine integral Ci(z) = γ+log(z)+$\boldsymbol{I}_{t=0,z}$\{(cos(t)-1)/t\}; Ci(conj(z))=conj(Ci(z)); For real x>0: maxima at x=(2k-1/2)π, minima at x=(2k+1/2)π, k=1,2,3,...		
More: This covers also the related entire cosine integral function Cin(z) = $\boldsymbol{I}_{t=0,z}$\{(1-cos(t))/t\}. Identity: Cin(z)+Ci(z) = γ+log(z).		
Ci(1) = real(Ci(-1))	0.337 403 922 900 968 134 662 646 •••	γ+$\boldsymbol{S}_{k>0}$\{$(-1)^k$/(2k)!(2k))\} = γ-1/(2!2)+1/(4!4)-1/(6!6)+1/(8!8)+...
Ci(±**i**)	0.837 866 940 980 208 240 894 678 •••	±**i** π/2

$Ci(\pi/2)$, absolute maximum for real z	0.472 000 651 439 568 650 777 606 •••	= real(li(**i**)), li being the logarithmic integral
$Ci(3\pi/2)$, first local minimum for real z	-0.198 407 560 692 358 042 506 401 ...	With growing real x, Ci(x) exhibits ripples converging to 0.
Solutions of Ci(x) = 0 for real x:	1st: 0.616 505 485 620 716 233 797 110 ...	2nd: 3.384 180 422 551 186 426 397 851 ..., etc.
Real solution of x+Ci(x) = 0	0.393 625 563 408 040 091 457 836 ...	The unique real-valued fixed point of -Ci(z)
Gamma $\Gamma(z) = I_{t=0,z}\{ t^{z-1} e^{-t} \}$; $\Gamma(z+1) = z.\Gamma(z)$; $\Gamma(1) = \Gamma(2) = 1$; for n>0, $\Gamma(n) = n!$		
Location of $\Gamma(x)$ minimum for x ≥ 0	1.461 632 144 968 362 341 262 659 •••	Also the positive root of **digamma function** $\psi(x)$
Value of $\Gamma(x)$ minimum for x ≥ 0	0.885 603 194 410 888 700 278 815 •••	For x > 0, the Gamma function minimum is unique
$I_{x=a,a+1}(\log(\Gamma(x)) + a - a.\log(a)$	0.918 938 533 204 672 741 780 329 •••	= log(2**π**)/2, for any a≥0 (the **Raabe** formula)
Location and value of $\Gamma(x)$ maximum in (-1,-0)	x= -0.504 083 008 264 455 409 258 269 •••	$\Gamma(x)$= -3.544 643 611 155 005 089 121 963 •••
Location and value of $\Gamma(x)$ minimum in (-2,-1)	x= -1.573 498 473 162 390 458 778 286 •••	$\Gamma(x)$= +2.302 407 258 339 680 135 823 582 •••
$\Gamma(1/2)$	1.772 453 850 905 516 027 298 167 •••	$\sqrt{\pi}$, this crops up very often
$\Gamma(1/3)$	2.678 938 534 707 747 633 655 692 ••• #t	$\Gamma(2/3)$ = 1.354 117 939 426 400 416 945 288 •••
$\Gamma(1/4)$	3.625 609 908 221 908 311 930 685 ••• #t	$\Gamma(3/4)$ = 1.225 416 702 465 177 645 129 098 •••
$I_{x=0,\infty}\{1/\Gamma(x)\}$	2.807 770 242 028 519 365 221 501 •••	Fransén-Robinson constant
$\Gamma($ **i** $)$ (real and imaginary parts)	-0.154 949 828 301 810 685 124 955 •••	- **i** 0.498 015 668 118 356 042 713 691 •••
$1/\Gamma(\pm$ **i** $)$ (real and imaginary parts)	-0.569 607 641 036 681 806 028 615 ...	± **i** 1.830 744 396 590 524 694 236 582 ...
Polygamma functions $\psi_n(z)$ are (n+1)st logarithmic derivatives of $\Gamma(z)$, or n-th derivatives of $\psi(z) \equiv \psi_0(z)$.		
More: Recurrence: $\psi_n(z+1) = \psi_n(z)+(-1)^n n! / z^{n+1}$. Reflection: $\psi_n(1-z)+(-1)^{n+1}\psi_n(z) = \pi (d/dz)^n \cot(\pi z)$. For integer k≤0, $L_{x\to k\pm}\{\psi_n(x)\} = (-(\pm1))^{n+1}\infty$.		
Digamma $\psi(z) = d \log(\Gamma(z)) / dz$. $\psi(z+1) = \psi(z) + 1/z$. $\psi(1-z) = \psi(z) + \pi.\cot(\pi z)$. $\psi(2z) = (\psi(z)+\psi(z+1/2))/2 + \log(2)$. For positive real root, see above. See also.		
$\psi(1) = -\gamma$	- 0.577 215 664 901 532 860 606 512 •••	$\psi(2) = 1-\gamma$ = +0.422 784 335 098 467 139 393 488 •••
$\psi(\pm$ **i** $)$	0.094 650 320 622 476 977 271 878 •••	± **i** 2.076 674 047 468 581 174 134 050 •••
$\psi(1/2) = -\gamma -2.\log(2)$	- 1.963 510 026 021 423 479 440 976 •••	$\psi(-1/2)$ = 2+psi(1/2) = 0.036 489 973 978 576 520 559 024 •••
Trigamma $\psi_1(z) = d\, \psi(z) / dz$. $\psi_1(z+1) = \psi_1(z) - 1/z^2$. See also.		
$\psi_1(1)$	1.644 934 066 848 226 436 472 415 ••• #t	$= \zeta(2) = \pi^2/6$, ζ being the Riemann zeta function.
$\psi_1(\pm$ **i** $)$	-0.536 999 903 377 236 213 701 673 ...	-± **i** 0.794 233 542 759 318 865 583 013 ...
$\psi_1(1/2) = \pi^2/2$	4.934 802 200 544 679 309 417 245 •••	$\psi_1(-1/2) = 4+\psi_1(1/2) = 4+\pi^2/2$
*Bessel functions (**BF**) $B_v(z) \equiv y(z)$ are solutions of the differential equation $z^2.y''+z.y'+(z^2\pm v^2).y = 0$ (lower sign is for modified Bessel functions)*		
BF of the first kind (regular at z=0): $J_v(z) = (1/\pi)\, I_{t=0,\pi}\{\cos(vt-z.\sin(t))\}$, and the modified BF of the first kind: $I_v(z) = (1/\pi)\, I_{t=0,\pi}\{\exp(z.\cos(t)).\cos(vt)\} = \mathbf{i}^{-v} J_v(\mathbf{i}z)$		
General properties: For integer k, $J_k(-z) = (-1)^k J_k(z)$ and $I_k(-z) = (-1)^k I_k(z)$. For k=0, $J_0(0) = I_0(0) = 1$, otherwise $J_k(0) = I_k(0) = 0$.		

$J_0(\pm 1) = I_0(\pm \mathbf{i})$	0.765 197 686 557 966 551 449 717 ...	In general, $I_0(z) = J_0(-\mathbf{i}.z)$
$J_0(\pm \mathbf{i}) = I_0(\pm 1)$	1.266 065 877 752 008 335 598 244 •••	For real r, $J_0(r)$ and $J_0(r.\mathbf{i})$ are real
$J_0(\pm 2) = I_0(\pm 2\mathbf{i})$	0.223 890 779 141 235 668 051 827 •••	$= \boldsymbol{S}_{k\geq 0}\{(-1)^k/k!^2\}$
$J_0(\pm 2\mathbf{i}) = I_0(\pm 2)$	2.279 585 302 336 067 267 437 204 •••	$= \boldsymbol{S}_{k\geq 0}\{1/k!^2\}$
1st root of $J_0(x)$	±2.404 825 557 695 772 768 621 631 •••	2nd: ±5.520 078 110 286 310 649 596 604 ...
3rd root of $J_0(x)$	±8.653 727 912 911 012 216 954 198 ...	4th: ±11.791 534 439 014 281 613 743 044 ...
$J_1(\pm 1) = -\mathbf{i}.I_1(\pm \mathbf{i})$	±0.440 050 585 744 933 515 959 682 ...	In general, $I_1(z) = -\mathbf{i}.J_1(\pm \mathbf{i}\ z)$
$J_1(\pm \mathbf{i}) = -\mathbf{i}.I_1(-(\pm)1)$	At real x, $J_1(\pm \mathbf{i}x)$ is imaginary, $I_1(\pm \mathbf{i}x)$ is real	± **i** 0.565 159 103 992 485 027 207 696 •••
1st root of $J_1(x)$, other than x = 0.0	±3.831 705 970 207 512 315 614 435 •••	2nd: ±7.015 586 669 815 618 753 537 049 ...
3rd root of $J_1(x)$	± 10.173 468 135 062 722 077 185 711 ...	4th: ± 13.323 691 936 314 223 032 393 684 ...
Imaginary order:		
$J_{\pm\mathbf{i}}(\pm 1) = \exp(\pm\pi/2).I_{\pm\mathbf{i}}(\mathbf{i})$	1.641 024 179 495 082 261 264 869 ...	-(±) **i** 0.437 075 010 213 683 064 502 605 ...
$J_{\pm\mathbf{i}}(\pm \mathbf{i}) = \exp(\pm\pi/2).I_{\pm\mathbf{i}}(-(\pm)\ 1)$	0.395 137 431 337 007 718 800 172 ...	-(±) **i** 0.221 175 556 871 848 055 937 508 ...
$J_{\pm\mathbf{i}}(-(\pm)\ \mathbf{i}) = \exp(\pm\pi/2).I_{\pm\mathbf{i}}(\pm 1)$	9.143 753 846 275 618 780 610 618 ...	-(±) **i** 5.118 155 579 455 226 532 551 733 ...
BF of the second kind: $Y_v(z) = (J_v(z)\cos(v\pi)-J_{-v}(z))/\sin(v\pi)$, and the modified BF of the second kind $K_v(z) = (\pi/2)(I_{-v}-I_v)/\sin(v\pi)$; for integer v, apply limit (continuity in v)		
Notes: These are all singular (divergent) at z=0. The Y-functions are sometimes denoted as **Bessel N-functions**.		
$Y_0(+1)$	0.088 256 964 215 676 957 982 926 ...	For positive real arguments, $Y_n(z)$ is real
$Y_0(-1)$; its real part equals $Y_0(+1)$	0.088 256 964 215 676 957 982 926 ...	+**i** 1.530 395 373 115 933 102 899 435 ...
$Y_0(\pm \mathbf{i})$; its imaginary part equals $J_0(\pm \mathbf{i})$	-0.268 032 482 033 988 548 762 769 ...	± **i** 1.266 065 877 752 008 335 598 244 •••
1st root of $Y_0(x)$	±0.893 576 966 279 167 521 584 887 ...	2nd: ±3.957 678 419 314 857 868 375 677 ...
3rd root of $Y_0(x)$	±7.086 051 060 301 772 697 623 624 ...	4th: ±10.222 345 043 496 417 018 992 042 ...
$K_0(+1)$	0.421 024 438 240 708 333 335 627 ...	For positive real arguments, $K_n(z)$ is real
$K_0(-1)$; its real part equals $K_0(+1)$	0.421 024 438 240 708 333 335 627 ...	-**i** 3.977 463 260 506 422 637 256 609 ...
$K_0(\pm \mathbf{i})$	-0.138 633 715 204 053 999 681 099 ...	-(±) **i** 1.201 969 715 317 206 499 136 662 ...
$Y_1(+1)$	-0.781 212 821 300 288 716 547 150 ...	For positive real arguments, $Y_n(z)$ is real
$Y_1(-1)$; its real part equals $-Y_1(+1)$	0.781 212 821 300 288 716 547 150 ...	-**i** 0.880 101 171 489 867 031 919 364 ...
$Y_1(\pm \mathbf{i})$; its real part equals $\mathrm{imag}(J_1(-\mathbf{i}))$	-0.565 159 103 992 485 027 207 696 •••	± **i** 0.383 186 043 874 564 858 082 704 ...
1st root of $Y_1(x)$	±2.197 141 326 031 017 035 149 033 ...	2nd: ±5.429 681 040 794 135 132 772 005 ...
3rd root of $Y_1(x)$	± 8.596 005 868 331 168 926 429 606 ...	4th: ± 11.749 154 830 839 881 243 399 421 ...

Hankel functions, alias **Bessel functions of the third kind**		
HF of the first kind $H1_v(z) = J_v(z)+\mathbf{i}.Y_v(z) = (J_{-v}(z) - e^{-iv\pi}J_v(z))/(\mathbf{i}.\sin(v\pi))$, and HF of the second kind $H2_v(z) = J_v(z)-\mathbf{i}.Y_v(z) = (J_{-v}(z) - e^{iv\pi}J_v(z))/(-\mathbf{i}.\sin(v\pi))$		
$H1_0(\pm 1)$	±0.765 197 686 557 966 551 449 717 ...	**+i** 0.088 256 964 215 676 957 982 926 ...
$H1_0(+\mathbf{i})$	0.0	**-i** 0.268 032 482 033 988 548 762 769 ...
$H1_0(-\mathbf{i})$	2.532 131 755 504 016 671 196 489 ...	**-i** 0.268 032 482 033 988 548 762 769 ...
$H2_0(+1)$	0.765 197 686 557 966 551 449 717 ...	**-i** 0.088 256 964 215 676 957 982 926 ...
$H2_0(-1)$	2.295 593 059 673 899 654 349 152 ...	**-i** 0.088 256 964 215 676 957 982 926 ...
$H2_0(\mathbf{i})$	2.532 131 755 504 016 671 196 489 ...	**-i** 0.268 032 482 033 988 548 762 769 ...
$H2_0(-\mathbf{i})$	0.0	**-i** 0.268 032 482 033 988 548 762 769 ...
Spherical Bessel functions $b_v(z) \equiv y$ are solutions of the differential equation $z^2.y''+2z.y'+[z^2-v(v+1)].y = 0$.		
Spherical BF of the first kind (regular at z=0): $j_v(z) = \mathrm{sqrt}(\pi/(2z))\ J_{v+1/2}(z)$, where J is the Bessel J-function. $j_v(-z) = (-1)^v\ j_v(z)$. Using Kroneker δ, $j_v(0) = \delta_{v,0}$.		
$j_0(\pm 1) = \sin(1) = \sinh(\mathbf{i})/\mathbf{i}$	0.841 470 984 807 896 506 652 502 ••• #t	$j_0(z)$ = sinc(z) = sin(z)/z is an entire functtion. Note: $j_0(0) = 1$.
$j_0(\pm\ \mathbf{i}) = \sinh(1) = \sin(\mathbf{i})/\ \mathbf{i}$	1.175 201 193 643 801 456 882 381 ••• #t	$j_0(z) = \boldsymbol{S}_{k\geq 0}\{(-1)^k z^{2k}/(2k+1)!\}$.
$j_1(\pm 1) = \pm(\sin(1)-\cos(1))$	± 0.301 168 678 939 756 789 251 565 •••	$j_1(z) = (\sin(z)-z*\cos(z))/z^2$ is an entire functtion. Note: $j_1(0) = 0$.
$j_1(\pm\ \mathbf{i})$	± **i** 0.367 879 441 171 442 321 595 523 ••• #t	$j_1(\pm\ \mathbf{i}) = \pm\ \mathbf{i}\ /\ \mathbf{e}$.
Spherical BF of the second kind: $y_v(z) = \mathrm{sqrt}(\pi/(2z))\ Y_{v+1/2}(z)$, where Y is the Bessel Y-function. Often denoted also as $n_v(z)$. $\boldsymbol{L}_{x\to 0\pm} = -(\pm)\infty$.		
$y_0(\pm 1) = -(\pm)\cos(1) = -(\pm)\cosh(\mathbf{i})$	-(±) 0.540 302 305 868 139 717 400 936 •••	$y_0(z) = -\cos(z)/z$.
$y_0(\pm\ \mathbf{i}) = \pm\ \mathbf{i}.\cos(\mathbf{i}) = \pm\ \mathbf{i}.\cosh(1)$	± **i** 1.543 080 634 815 243 778 477 905 ••• #t	$y_0(z) = -(1/z)\boldsymbol{S}_{k\geq 0}\{(-1)^k z^{2k}/(2k)!\}$.
$y_1(\pm 1) = -(\sin(1)+\cos(1))$	-1.381 773 290 676 036 224 053 438 ...	$y_1(z) = -(z*\sin(z)+\cos(z))/z^2$. Note: $y_1(0) = -\infty$.
$y_1(\pm\ \mathbf{i})$	0.367 879 441 171 442 321 595 523 ••• #t	$= 1/\ \mathbf{e} = j_1(\mathbf{i})\ /\ \mathbf{i}$.
Dawson integral $F(x) = e^{-x\verb|^|2}\ \boldsymbol{I}_{t=0,x}\{e^{t\verb|^|2}\}$		
Maximum: Location x_{max}	0.924 138 873 004 591 767 012 823 •••	F(x) being an odd function; there is a minimum at $-x_{max}$
Maximum: Value at x_{max}	0.541 044 224 635 181 698 472 759 •••	$F(x_{max}) = 1/(2x_{max})$. The value of $-F''(x_{max})$ is twice this one.
Inflection: Location x_i	1.501 975 268 268 611 498 860 348 •••	Dawson integral: see above.
Inflection: Value at x_i	0.427 686 616 017 928 797 406 755 •••	$F(x_i) = x_i/(2x_i^2-1)$.
F(x) inflection: Derivative at x_i	-0.284 749 439 656 846 482 522 031 •••	$F(x_i) = x_i/(2x_i^2-1)$.
*Lambert W-function $W_K(z)$: multi-valued left inverse of the mapping z*exp(z). $W_0(x)$ is real for $x \in [-1/e,+\infty)$. $W_{-1}(x)$ is real for $x \in [-1/e,0)$.*		
$W_0(1) \equiv$ **omega constant**	0.567 143 290 409 783 872 999 968 •••	$W_0(-1/e) = -1$, $W_0(0) = 0$, $\boldsymbol{L}_{x\to\infty}\{W_0(x)\} = \infty$
$W_0(\pm\mathbf{i})$	0.374 699 020 737 117 493 605 978 ...	**±i** 0.576 412 723 031 435 283 148 289 ...

$W_0(-1)$ = conjugate of $W_{-1}(-1)$	-0.318 131 505 204 764 135 312 654 •••	±**i** 1.337 235 701 430 689 408 901 162 •••
Inflection location x_i of $W_{-1}(x)$ for real x	-0.270 670 566 473 225 383 787 998 ...	$= -2/e^2$ so that $W_{-1}(x_i) = -2$. $W_{-1}(-1/e) = -1$, $\boldsymbol{L}_{x\to 0-}\{W_{-1}(x)\} = -\infty$
$W_{-1}(+\mathbf{i})$ = conjugate of $W_1(-\mathbf{i})$	-1.089 648 913 877 781 029 302 988 ...	-**i** -2.766 362 603 273 869 178 517 538 ...
$W_{-1}(-\mathbf{i})$ = conjugate of $W_1(\mathbf{i})$	-1.834 271 700 407 880 400 923 088 ...	-**i** -5.985 834 988 966 545 709 364 109 ...
Function f(z) = z $^{\boldsymbol{z}}$ *= exp(z*log(z)). This is an entire function. f(0)=f(1)=1, f(-1)=-1.*		
f(**i**) = f(-**i**) = $\mathbf{i}^{\mathbf{i}}$	0.207 879 576 350 761 908 546 955 ••• #t	$= e^{-\pi/2}$ (real value!)
Location of minimum (on real axis)	0.367 879 441 171 442 321 595 523 •••	$x_{min} = 1/e$. The minimum is unique.
Location of minimum (on real axis)	0.367 879 441 171 442 321 595 523 •••	$x_{min} = 1/e$. The minimum is unique.
Value at minimum	0.692 200 627 555 346 353 865 421 •••	$e^{-1/e}$.

Mathematical constants useful in Sciences

Planck's radiation law ***on frequency scale: Prl****(x) = $x^3/(e^x - 1)$, or wavelength scale:* ***Prl****(λ) = $\lambda^{-5}(e^{1/\lambda} - 1)^{-1}$*		
Integral $\boldsymbol{I}_{x=0,\infty}\{x^3/(e^x - 1)\}$	6.493 939 402 266 829 149 096 022 •••	$\pi^4/15$.
Related: the roots of $x = K*(1 - e^{-x})$	K=5: 4.965 114 231 744 276 303 698 759 •••	K=4: 3.920 690 394 872 886 343 560 891 •••
See Calculation of blackbody radiation, App.C	K=3: 2.821 439 372 122 078 893 403 191 •••	K=2: 1.593 624 260 040 040 092 323 041 •••
Function sinc(z) = sin(z)/z and its Hilbert transform ***hsinc****(z), both appearing in spectral theory (transient data truncation artifacts).*		
sinc(z) = sin(z)/z = j_0(z) (the spherical Bessel function). sinc(-z) = sinc(z), sinc(0) = 1, sinc(±**i**) = cosh(1), sinc(±1) = imag(exp(**i**)).		
Half-height argument	1.895 494 267 033 980 947 144 035 •••	Solution of sinc(x) = 1/2
First minimum location	4.493 409 457 909 064 175 307 880 •••	First positive solution of tan(x) = x
First minimum value	-0.217 233 628 211 221 657 408 279 •••	
hsinc(z) = (1-cos(z))/z, appearing in spectral theory (transient data truncation artifacts). hsinc(-z) = -hsinc(z).		
First maximum location	2.331 122 370 414 422 613 667 835 •••	Also first positive solution of **x.sin(x) = 1-cos(x)**
First maximum value	0.724 611 353 776 708 475 738 990 •••	
Functions sinc(n,x), for integer n ≥ 0, the radial profile of nD Fourier transform of an n-dimensional unit sphere		
First roots ξ_n and definitions of sinc(n,x) in terms of Bessel functions		
ξ_0	2.404 825 557 695 772 768 621 631 ••• #t	sinc(0,x) = J_0(x), the Bessel function
$\xi_1 = \pi$	3.141 592 653 589 793 238 462 643 ••• #t	sinc(1,x) = sin(x)/x = sinc(x) = j_0(x), 1st kind spherical Bessel
ξ_2	3.831 705 970 207 512 315 614 435 •••	sinc(2,x) = $2J_1(x)/x$
ξ_3 , also location of 1st negative lobe of sinc(1,x)	4.493 409 457 909 064 175 307 880 •••	sinc(3,x) = $3[\sin(x)/x - \cos(x)]/x^2 = 3j_1(x)/x$
ξ_4	5.135 622 301 840 682 556 301 401 •••	sinc(4,x) = $8J_2(x)/x^3$

***Ideal gas statistics** with n randomly distributed particles per unit volume*		
1st **Chandrasekhar** constant $c = \Gamma(4/3)/(4\pi/3)^{1/3}$	0.553 960 278 365 090 204 701 121 •••	Mean distance to nearest neighbor = $c/n^{1/3}$
2nd **Chandrasekhar constant** $C = (2\pi)^{-1/3}$	0.541 926 070 139 289 008 744 561 •••	Most probable distance to nearest neighbor = $C/n^{1/3}$
***Spectral peaks** (lines) of height H and half-height width W:*		
Area of a Lorentzian peak / HW	1.570 796 326 794 896 619 231 321 •••	π / 2
Area of a Gaussian peak / HW	1.064 467 019 431 226 179 315 267 •••	sqrt(π /(4ln2))
Area of a Sinc peak / HW	0.828 700 120 129 003 061 896 869 •••	π/(2η), η being defined by **sinc**(η) = 1/2 (see **sinc** function)
***Bloembergen-Purcell-Pound function bpp**(x) = $x/(1+x^2) + 4x/(1+4x^2)$, ubiquitous in the theory of 2nd rank relaxation processes*		
bpp(x) maximum: Location x_{max}	0.615 795 146 961 756 244 755 982 ...	bpp(x) being an odd function; there is a minimum at $-x_{max}$
bpp(x) maximum: Value at x_{max}	1.425 175 719 086 501 535 329 674 ...	For first term only: $bpp_{1,max}(y) = 0.5$, for y = 1
***Exponential settling** (relaxation) to an equilibrium of a physical system with a characteristic settling time T*		
Settling time to 10%, in units of T	2.302 585 092 994 045 684 017 991 •••	log(10). Settling level equals initial_deviation/final_deviation
... to 1% (10^{-2})	4.605 170 185 988 091 368 035 982 •••	log(100)
... to 0.1% (10^{-3})	6.907 755 278 982 137 052 053 974 ...	log(1000)
... to 100 ppm (10^{-4}, 1000 ppm)	9.210 340 371 976 182 736 071 965 ...	log(10^4)
... to 10 ppm (10^{-5})	11.512 925 464 970 228 420 089 957 ...	log(10^5)
... to 1 ppm (10^{-6})	13.815 510 557 964 274 104 107 948 ...	log(10^6)
... to 1 ppb (10^{-9})	20.723 265 836 946 411 156 161 923 ...	log(10^9)
Settling level after 1 T	0.367 879 441 171 442 321 595 523 •••	After time t = n*T exp(-1), the settling level equals exp(-n).
... 2 T	0.135 335 283 236 612 691 893 999 •••	3 T: 0.049 787 068 367 863 942 979 342 •••
... 4 T	0.018 315 638 888 734 180 293 718 •••	5 T: 0.006 737 946 999 085 467 096 636 •••
... 6 T	0.002 478 752 176 666 358 423 045 •••	7 T: 0.000 911 881 965 554 516 208 003 ...

Statistics and probability constants

***Normal probability distribution** with mean μ and variance σ. Density N(x,σ,μ) = exp(-((x-μ)/σ)^2 /2) / (σ√(2π)):*		
Density maximum * σ	0.398 942 280 401 432 677 939 946 •••	1/√(2π), attained at x = 0
$E[x^{2n}] / \sigma^{2n}$, for μ=0, n = 0,1,2,...	1, 1, 3, 15, 105, 945, 10395, 135135, •••	= (2*n-1)!!. Note: $E[x^n]$ is zero for odd n.
$E[\lvert x\rvert^{2n-1}] * \sqrt{(2*\pi)} / \sigma^{2*n-1}$, for μ=0, n = 1,2,3,...	2, 4, 16, 96, 768, 7680, 92160, 1290240, •••	= $(n-1)!*2^n$. Note: $E[\lvert x\rvert^{2n}]$ values match the entry above.
Entropy - log(σ)	1.418 938 533 204 672 741 780 329 •••	= (1+log(2π))/2, independent of μ.
Percentiles: x/σ for which $\boldsymbol{I}_{t=-\infty,x}\{N(t,\sigma)\} = P$, $\boldsymbol{I}_{t=-x,x}\{N(t,\sigma)\} = 2P-1$		

75%	0.674 489 750 196 081 743 202 227 •••	Probable error: x/σ for which $I_{t=-x,x}${N(t,σ)} = 0.5
80%	0.841 621 233 572 914 205 178 706 ...	85% ... 1.036 433 389 493 789 579 713 244 ...
90%	1.281 551 565 544 600 466 965 103 ...	95% ... 1.644 853 626 951 472 714 863 848 ...
98%	2.053 748 910 631 823 052 937 351 ...	99% ... 2.326 347 874 040 841 100 885 606 ...
99.9%	3.090 232 306 167 813 541 540 399 ...	99.99% ... 3.719 016 485 455 680 564 393 660 ...
99.999%	4.264 890 793 922 824 628 498 524 ...	99.9999% ... 4.753 424 308 822 898 948 193 988 ...
Probability that a random value superates n standard deviations, p_n = 0.5*erfc(n/√2). Equals P{x/σ > n} or P{x/σ < -n}, which is half of P{|x/σ| > n}:		
n = 1	0.158 655 253 931 457 051 414 767 •••	n = 2 ... 0.022 750 131 948 179 207 200 282 •••
n = 3	0.001 349 898 031 630 094 526 651 •••	n = 4 ... 0.000 031 671 241 833 119 921 253 •••
n = 5	0.000 000 286 651 571 879 193 911 •••	n = 6 ... 0.000 000 000 986 587 645 037 698 •••
Engineering constants; click here for conventional physical constants instead		
Amplitude / Effective_Amplitude	1.414 213 562 373 095 048 801 688 •••	√2, holds only for harmonic functions
Power factor of 2 (or 0.5) in dB	±3.010 299 956 639 811 952 137 388 •••	±10.Log(2); corresponding amplitudes ratio is √2 : 1
Amplitude factor of 2 (or 0.5) in dB	±6.020 599 913 279 623 904 274 777 •••	±20.Log(2)
***±1 dB ratios**:*		
Power	1.258 925 411 794 167 210 423 954 •••	$10^{+1/10}$
Inverse power	0.794 328 234 724 281 502 065 918 ...	$10^{-1/10}$
Amplitude	1.122 018 454 301 963 435 591 038 •••	$10^{+1/20}$
Inverse amplitude	0.891 250 938 133 745 529 953 108 ...	$10^{-1/20}$
***±3 dB ratios**:*		
Power	1.995 262 314 968 879 601 352 455 ...	$10^{+3/10}$ +3 dB in power or +6 dB in amplitude
Inverse power	0.501 187 233 627 272 285 001 554 ...	$10^{-3/10}$ -3 dB in power or -6 dB in amplitude
Amplitude	1.412 537 544 622 754 302 155 607 ...	$10^{+3/20}$
Inverse amplitude	0.707 945 784 384 137 910 802 214 ...	$10^{-3/20}$
***Music and acoustics**:*		
Half-note frequency ratio	1.059 463 094 359 295 264 561 825 •••	$2^{1/12}$
Perfect fifth ratio	3/2, exact	also 2/3
Pythagorean comma	1.013 643 264 770 507 8125	$(3/2)^{12}/2^7$, frequency ratio of 12 perfect fifth to 7 octaves
Rumors constant	0.203 187 869 979 979 953 838 479 •••	Solution of $x.e^2 = e^{2x}$. Appears in the statistical theory of noise.

Software and computer engineering constants

Decadic-to-binary precision/capacity factor	3.321 928 094 887 362 347 870 319 •••	$log_2(10)$; Example: 7 decadic digits require 23+ binary bits
Binary-to-decadic precision/capacity factor	0.301 029 995 663 981 195 213 738 •••	Log(2); Example: 31 binary bits require 9+ decimal digits
Unsigned integer *data types* ***maximum values*** *(for* ***signed integers*** *see the 3rd column)*		
byte (8 bits) 2^8-1	255	signed max = 2^7-1 = +127
word (16 bits) 2^16-1	65'535	signed max = 2^15-1 = +32'767
dword (double word, 32 bits) 2^32-1	4'294'967'295	signed max = 2^31-1 = +2'147'483'647
qword (quad word, 64 bits) 2^64-1	18'446'744'073'709'551'615	signed max = 2^63-1 = +9'223'372'036'854'775'807
Bit configurations *which* ***can't be used as signed integers*** *since, though formally negative, aritmetic negation returns the same value (****weird numbers****)*		
8 bits	hex 0x80	signed -2^7 = -128
16 bits	hex 0x8000	signed -2^15 = -32'768
32 bits	hex 0x80000000	signed -2^31 = -2'147'483'648
64 bits	hex 0x8000000000000000	signed -2^63 = -9'223'372'036'854'775'808
Floating point data types. *The epsilon value is the precision limit, such that, for x < ε, 1+ε returns 1*		
float (1+8+23 bits): **Maximum** value	3.40282366920938463463374б...e+38	2^(2^(8-1)); IEEE 754; bits are for: sign, exponent, mantissa
float (1+8+23 bits): **minimum** value	1.401298464324817070923729...e-45	2*2^(-2^(8-1))*2^(-(23-1))
float (1+8+23 bits): **epsilon** value	1.1920928955078125 e-7	2^(-23)
double (1+11+52 bits): **Maximum** value	1.79769313486231590772930...e+308	2^(2^(11-1)); IEEE 754; bits are for: sign, exponent, mantissa
double (1+11+52 bits): **minimum** value	4.94065645841246544176568...e-324	2*2^(-2^(11-1))*2^(-(52-1))
double (1+11+52 bits): **epsilon** value	2.220446049250313080847263...e-16	2^(-52)
long double (1+15+64 bits): **Maximum** value	1.189731495357231765085759...e+4932	2^(2^(15-1)); internal 10-byte format of Intel "coprocessor"
long double (1+15+64 bits): **minimum** value	1.822599765941237301264202...e-4951	2*2^(-2^(15-1))*2^(-(64-1))
long double (1+15+64 bits): **epsilon** value	5.42101086242752217003726...e-20	2^(-64)

Conversion constants.

Conversions between logarithms *in bases* ***e*** *(natural), 10 (decadic), and 2 (binary).*		
log(2), Natural logarithm of 2	0.693 147 180 559 945 309 417 232 ••• #t	Solution of $\mathbf{e}^x = 2$
Log(2), Decadic logarithm of 2	0.301 029 995 663 981 195 213 738 •••	Solution of $10^x = 2$
log(10), Natural logarithm of 10	2.302 585 092 994 045 684 017 991 •••	Solution of $\mathbf{e}^x = 10$
$log_2(10)$, Binary logarithm of 10	3.321 928 094 887 362 347 870 319 •••	Solution of $2^x = 10$

Log(**e**), Decadic logarithm of **e**	0.434 294 481 903 251 827 651 128 •••	Solution of 10^x = **e**
$\log_2$(**e**), Binary logarithm of **e**	1.442 695 040 888 963 407 359 924 •••	Solution of 2^x = **e**
Plane angles**. Radians (rad) and degrees (deg) are **plane angles		
1 rad in **deg**s	57.295 779 513 082 320 876 798 15 •••	180/π = 57° 17' 44.806247096355156473357330..."
1 deg in **rad**s	0.017 453 292 519 943 295 769 237 •••	π/180
1 rad in **arcmin**	3437,746 770 784 939 252 607 889 ...	60*(180/π)
1 arcmin in **rad**s	2.908 882 086 657 215 961 539... e-4	(π/180)/60
1 rad in **arcsec**	206264,806 247 096 355 156 473 357 •••	60*60*(180/π)
1 arcsec in **rad**s	4.848 136 811 095 359 935 899 ••• e-6	(π/180)/60/60
***Solid angles**. Steradians (sr), square radians (rad^2), and square degrees (deg^2) are **areas on a unit sphere**.*		
Full solid angle of 4π steradians in **deg^2**	41252.961 249 419 271 031 294 671 •••	$4\pi/(\pi/180)^2 = 360^2/\pi$
1 sr in **deg^2**	3282.806 350 011 743 794 781 694 •••	$(180/\pi)^2$; exact for infinitesimal areas
1 deg^2 in **sr**	0.000 304 617 419 786 708 599 346 •••	$(\pi/180)^2$; exact for infinitesimal areas; inverse of the above
1 sr in **rad^2**	1.041 191 803 606 873 340 234 607 •••	2*asin(√(sin(1/4)))

Notes

Purpose

Since every number is a math constant, there can not exist any list containing them all.
Yet some numbers catch our fancy because they were studied in more detail than others (historic importance) and such studies uncovered unusual, even counter-intuitive, aspects (with the reasons being often related more to human mind than to the numbers themselves). Learning about such numbers is fun and - maybe - teaches us something about ourselves.
The main purpose of this selection is to **stimulate curiosity** and the desire to study Math.

What is included

This collection started with just a few real numbers in mind, but it soon grew and branched into various categories. Presently, real, complex, integer, and rational numbers are all represented. I have even included some transfinite numbers and might soon include examples of quaternions, tensors, spinors, matrices, etc.
Recently, I have added some integer sequences which look fundamental to me from the educational and/or math-recreative point of view (I have no intention to compete with OEIS, of course; that would be foolish). Another new category, perhaps more 'utilitarian', is represented by special points and values related to important mathematical functions. Both initiatives are far from complete. Work in progress ...

Truncated values

Real values are **truncated** after the last shown digit, not rounded.

Complex-valued constants

are listed with their real part in the central column and imaginary part in the right column (otherwise reserved for notes).

Logarithms

Natural logarithm of x is written as log(x), while Log(x) denotes the decadic one, and a logarithm in base b is $\log_b(x)$.

Format of Limits (*L*), Sums (*S*), Products (*P*), and Integrals (*I*)

The general format is $\boldsymbol{O}_{\text{range}}$\{expression\}, where ***O*** is an operation-defining capital letter (bold italics).
The range can be something like "min, max", or a condition, such as "prime p>2".
Conditions k ≥ m; and k > m stand for k = m, m+1, m+2, ..., ∞ and k = m+1, m+2, ..., ∞, respectively.
In the case of limits, the formats used may be "x → c" or "x → ∞", or similar.

Operator expressions using the symbol #

A construct like f(a,#) = (#+a/#)/2 denotes an operator, rather than a function. Thus f(a,#)(x) = (x+a/x)/2 is the application of the operator to (x), where x may be a variable, an expression, a quaternion, a matrix, anything. The difference between the operator f and the function f is best seen in repeated applications:

f^2(a,#) = f(a,#)(f(a,#)) = (f(a,#)+a/f(a,#))/2 = ((x+a/x)/2+a/((x+a/x)/2))/2 which is different from the usual $f^2(x) = ((x+a/x)/2)^2$.

This permits to simplify statements regarding attractors of mappings, such as $\boldsymbol{A}_{(0,\infty)}\{(\#+a/\#)/2\} \equiv \boldsymbol{L}_{n=1,\infty}\{f^n(a,\#)\} = \sqrt{a}$.

Attributions of named constants

In a few cases I have taken the liberty of associating a name to a previously unnamed constant. I sincerely hope that these attributions will stick since, whenever they refer to persons, they acknowledge merit. They include:

- **Knuth's constant**: The ratio c/m in congruence random-number generators of the type $X_{n+1} = (aX_n+c) \bmod (m)$ which minimizes the correlation between successive values. See Knuth 1997, Section 3.3.3, Equation 41.
- **Chandrasekhar's constants** (**1st** and **2nd**): Originally related to nearest-neighbor statistics in an ideal gas, but having a much more general significance for any 3D, uniformly random distributions of points.
- **Cannery constant**, **Cooking pot constant**, **Frozen cone constant**, and **Teepee constant**: Four constants related to the minimum-surface indices of closed and open bodies. The derivations of these constants are nice exercises in elementary analysis. I think that giving them funny names might help math acceptance by non-mathematicians in everyday life.
- **Blazys constant**: a recent prime-numbers generating constant which struck the imagination of many people.
- **Graham's constant**: Rationalization of the fact that hyperpowers n^^k of a number n (3 in this case), for any k ≥ m, have all the same (m-2) trailing digits $d_{m-2}d_{m-2}...d_1d_0$. Writing the digits in reverse order as $0.d_0d_1d_2...$, and letting k->∞, one has a mathematically rigorous definition of a constant. See OEIS A133613.
- **Tanaka's number**, the first n>2 violating Polya's conjecture. It represents a deeply educational warning that no number of mere empirical 'tests' can replace a proof. Though violations of Polya's conjecture were known already before Tanaka's work, the determination of the first one was important. See OEIS A189229.

Links to OEIS, the *Online Encyclopedia of Integer Sequences*

Three bold dots after a value are a link to the OEIS database (OEIS accepts as integer sequences also decimal expansions of real-valued constants). The OEIS entries usually extend the values listed here (unless the sequence is finite and listed in full, and provide more references). I have registered a few OEIS entries myself, and I think that everybody who hits on a nice constant or integer sequence should do so as well.

Many links, other than those to OEIS and/or those appearing below,

are scattered through the text, accompanying the particular constants. This is an important feature, to be intensified.

Feedback:

If you think a link, or a constant, are missing, please, let me know. Such suggestions are most appreciated.

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14. Vazzana Anthony, Garth David,
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15. ... and many, many others.

Links

Mathematical constants and functions on **Wikipedia**.
Mathematical constants on **Wikipedia**.
Mathematical constants on Eric Weisstein's **MathWorld**.
The On-Line Encyclopedia of Integer Sequences (**OEIS**, ex **Sloane**'s). See also the OEIS Wiki.
Mathematical Constants by Steven Finch, plus a lot more. Many PDF's. **Excellent**.
Great Internet Mersenne Prime Search **GIMPS**.
Web Primes, a huge online repository of prime numbers.
The Prime Pages of Chris Caldwell at Uni Tennesee at Martin.
Prime products on *MathWorld*.
Computing Pi: Lists of Machin-type (inverse cotangent) identities for Pi/4, maintained by M.R.Wetherfield & H.Chien-lih.
Mathematical constants on Numericana, the web site of **Gérard P.Michon**.
Numbers Aplenty by *Giovanni Resta*.
Numbers, constants, and their computation by **Xavier Gourdon** and **Pascal Sebah**. 223 titled references.

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Arbitrary precision computing links on this website. See also these Math software.
Constants of physics and mathematics. A related resource on this website.
Mathematical constants and sequences. Link to this resource. You can also cite its DOI link: 10.3247/SL2Math08.001.

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