NIST Values of the Physical Constants - infochimps.org

Mathematics

Pi	π	35 8979 323846 26433 83279 50288

1971 69399 37510 58209 74944 59230 78164 06286 20899 86280 34825 34211

[~ 22/7 (.04%) or √10 (%.66)]

Pi Squared	π^2	9.869 604 401 089 36
Square Root of Pi	$\sqrt{\pi}$	1.772 453 850 905 52
1 Degree (π/180)	ϒ	0.017 453 292 519 94
Euler Number	e	2.718 281 828 459 05
Golden Ratio	ϕ	1.618 033 988 749 89
Euler-Mascheroni	γ	0.577 215 664 901 53
Catalan Constant		0.915 965 594 177 22
Khinchin Constant		1.745 405 662 407 35
Zeta(2)	$\zeta(2)$	1.644 934 066 848 23
1st Zero of Zeta Fn	$\zeta^{-1}0$	14.134 725 141 734 60
Feigenbaum Const	δ	4.669 201 609 102 99
Feigenbaum Width	α	-2.502 907 875 095 89
Moving Sofa Const		2.219 531 668 871 97
Square Root of 2	$\sqrt{2}$	1.414 213 562 373 10
Cube Root of 3	$\sqrt[3]{2}$	1.259 921 049 894 87
Square Root of 3	$\sqrt{3}$	1.732 050 807 568 88
ln 2		0.693 147 180 559 95
ln 10		2.302 585 092 994 05

Astronomy

Gravitational Const	G	6.673(10)	·10 -11	$m^3/kg{\cdot}s^2$
Earth Gravity (std)	g	9.80665		m/s^2

Also 35 km/hr per s, 32.174 ft/s^2, or 22 mi/hr per s

Earth-Sun distance	AU	1.4959787	·10 11	m
Sun-Milky Way Ctr	GU	2.65	·10 20	m
Earth Equator Radius	R_e	6.378137	·10 6	m
Solar Radius	R_s	6.95990	·10 8	m
Solar Constant		1373		W/m^2
Light Second		2.99792458	·10 8	m
Light Year	lY	9.46053	·10 15	m
Tropical Year	Yr	3.15569	·10 7	s

Also 365.2422 d: ~ $\pi \cdot 10^7$ (0.4%)

Parsec	Pc	3.085678	·10 16	m
		3.261633		lY
Hubble Constant	H_o	2 ± 0.7	·10 -18	1/s
		62 ± 20		km/s·MPc
Cosmic Backgd Temp		2.726		K

Chemistry

amu	u	1.660 538 73(13)	·10 -27	kg
Ideal Gas Constant	R	8.314 472(15)		J/mol K
Avogadro's Number	N_A	6.022 141 99(47)	·10 23	1/mol
Density of Air, STP	ρ_{air}	1.2929		kg/m^3
Density of Air, 20°C	ρ_{air}	1.2047		kg/m^3
Speed of Sound, STP	Z	331.45		m/s
Speed of Sound, 20°C	Z	343.37		m/s

[~3 s/km (-3%) or 5 s/mi (-7%)]

Ice Point (0°C)	0°C	273.15		K
Room Temp (22°C)		295.15		K
Sackur-Tetrode (1K,1atm)	S_o/R	-1.164 867 8(44)		
Faraday Const ($N_A e$)	F	9.648 534 15(39)	·10 4	C/mol e
Molar Vol (0°C,1atm)	V_m	22.413 996(39)	·10 -3	m3/mol

Electromagnetism

Speed of Light	c	2.9979 2458	·10 8	m/s
[~1 ft/ns (-1.5%)]				
Permittivity Free Spc	ε_o	8.854 187 817	·10 -12	F/m
Permeability Free Spc	μ_o	12.566 370 614	·10 -7	N/A^2
Free Space Impedance	Z_o	376.730 313 461		Ω
Electron Charge	e	-1.602 176 462(63)	·10 -19	C
eV per Joule	1/e	-6.241 509 742	·10 18	eV/J
Stefan-Boltzmann	σ	5.670 400(40)	·10 -8	W/m^2K^4
Wien Displacement	$\lambda_{pk} \cdot T$	2.897 768 6(51)	·10 -3	m K

Atomic and Nuclear Physics

Planck's Contant	h	4.135 667 27(16)	·10 -15	eV · s
		6.626 068 76(52)	·10 -34	J · s
Planck's Const / 2 π	$\hbar$	6.582 118 89(26)	·10 -16	eV · s
		1.054 571 596(82)	·10 -34	J · s
Electron Spin	$\hbar/2$	0.527 285 798	·10 -35	J · s
h c	h c	1239.841 857		eV·nm
		1.986 445 442	·10 -25	J·m
Boltzmann Constant	k	8.617 342 (15)	·10 -5	eV/K
		1.380 650 3(24)	·10 -23	J/K
Boltz↔Rm Temp (21°C)	kT_{room}	0.02543		eV
[~ 1/40 eV (1%)]				
Rydberg ($\alpha^2 m_e c/2h$)	R_∞	1.097 373 156 854 9(83)	·10 7	1/m
Bohr Radius	a_o	0.529 177 208 3(19)	·10 -10	m
Classical e Rad, $\alpha^2 a_o$	r_e	2.817 940 285(31)	·10 -15	m
Thompson Cross Sec	σ_e	0.665 245 854(15)	·10 -28	m^2
Electron Charge/Mass	e/m_e	-1.758 820 174(71)	·10 -12	C/kg
Electron Mass	m_e	9.109 381 88(72)	·10 -31	kg
	$m_e c^2$	0.510 998 902(21)	·10 6	eV
Proton Mass	m_p	1.672 621 58(31)	·10 -27	kg
	$m_p c^2$	938.271 998(38)	·10 6	eV
Neutron Mass	m_n	1.674 927 16(13)	·10 -27	kg
	$m_n c^2$	929.565 330(38)	·10 6	eV
Elect Compt λ ($h/m_e c$)	λ_C	2.426 310 215 (18)	·10 -12	m
Proton Compton λ	$\lambda_{C,p}$	1.321 409 847 (10)	·10 -15	m
Neutron Compton λ	$\lambda_{C,n}$	1.319 590 898(10)	·10 -15	m
Electron Mag. Moment	μ_e	-928.476 362(37)	·10 -26	J/T
Muon Mag. Moment	μ_μ	-4.490 448 13(22)	·10 -26	J/T
Proton Mag. Moment	μ_p	1.410 606 633 (58)	·10 -26	J/T
Neutron Mag. Moment	μ_n	-0.966 236 40(23)	·10 -26	J/T
Bohr Magneton ($eh/2m_e$)	μ_B	927.400 899(37)	·10 -26	J/T
Nuclear Magt'n ($eh/2m_p$)	μ_N	0.505 078 317 (20)	·10 -26	J/T
Mag Flux Qtm ($h/2e$)	Φ_o	2.067 833 636(81)	·10 -15	Wb
Quantum of Circulation	$h/2m_e$	3.636 947 516(27)	·10 -4	m^2/s
Fine Struct ($e^2/4\pi\varepsilon_o hc$)	α	7.297 352 533(27)	·10 -3	
	$1/\alpha$	137.035 999 76(50)	·10 -3	
Planck Mass	$\sqrt{\hbar c/G}$	2.176 7(16)	·10 -8	kg
Planck Scale (length)	$\sqrt{\hbar G/c^3}$	1.616 0(12)	·10 -35	m
Planck Time	$\sqrt{\hbar G/c^5}$	5.390 6(40)	·10 -44	s
Hartree Enrgy ($\alpha^2 m_e c^2$)	E_H	4.359 743 81(34)	·10 -18	J
Josephson f/V ($2e/h$)	K_J	4.835 978 98(19)	·10 14	Hz/V
Quantized Hall Resist	h/e^2	25 812.807 572(95)		Ω
Weak Mixing Angle	$\sin^2 \theta_W$	0.2224(19)		
Electron g-factor	g_e	-2.001 319 304 373 7(82)	·10 -12	J/T
Elec Mag. Mo. Anomaly	(μ_e/μ_B)-1	1.159 652 186 9(41)	·10 -3	J/T