Unit Conversions (& other helpful Physics info)

Prefix	Symbol	10^n	Decimal	Scientific Notation
yotta	Y	10^{24}	1000000000000000000000000	1E24
zetta	Z	10^{21}	1000000000000000000000	1E21
exa	E	10^{18}	1000000000000000000	1E18
peta	P	10^{15}	1000000000000000	1E15
tera	T	10^{12}	1000000000000	1E12
giga	**G**	**10^{9}**	**1000000000**	**1E9**
mega	**M**	**10^{6}**	**1000000**	**1E6**
kilo	**k**	**10^{3}**	**1000**	**1E3**
hecto	**h**	**10^{2}**	**100**	**1E2**
deca	**da**	**10^{1}**	**10**	**1E1**
		10^{0}	**1**	**–**
deci	**d**	**10^{-1}**	**0.1**	**1E-1**
centi	**c**	**10^{-2}**	**0.01**	**1E-2**
milli	**m**	**10^{-3}**	**0.001**	**1E-3**
micro	**μ**	**10^{-6}**	**0.000001**	**1E-6**
nano	**n**	**10^{-9}**	**0.000000001**	**1E-9**
pico	**p**	**10^{-12}**	**0.000000000001**	**1E-12**
femto	f	10^{-15}	0.000000000000001	1E-15
atto	a	10^{-18}	0.000000000000000001	1E-18
zepto	z	10^{-21}	0.000000000000000000001	1E-21
yocto	y	10^{-24}	0.000000000000000000000001	1E-24

Example: 1×10^{3} m = 1 km 1×10^{-3} m = 1 mm

Unit Conversions: 1 in = 2.54 cm 1 mile = 5280 feet

SI Base Units:

Length	meter [m]
Mass	kilogram [kg]
Time	second [s]
Electric Charge	Ampere [A]
Temperature	Kelvin [K]

The Greek Alphabet

Alpha	A	α	Nu	N	ν
Beta	B	β	Xi	Ξ	ξ
Gamma	Γ	γ	Omicron	O	o
Delta	Δ	δ	Pi	Π	π
Epsilon	E	ϵ	Rho	P	ρ
Zeta	Z	ζ	Sigma	Σ	σ
Eta	H	η	Tau	T	τ
Theta	Θ	θ	Upsilon	Y	υ
Iota	I	ι	Phi	Φ	ϕ, φ
Kappa	K	κ	Chi	X	χ
Lambda	Λ	λ	Psi	Ψ	ψ
Mu	M	μ	Omega	Ω	ω

SI Derived Units:

Name	Symbol	Quantity	In terms of other units	In terms of SI base units
Hertz	Hz	Frequency	1/s	s-1
Newton	N	Force, Weight	m.kg.s-2	m.kg.s-2
Joule	J	Work, Heat	N.m	m2.kg.s-2
Watt	W	Power, Radiant flux	J/s	m2.kg.s-3
Pascal	Pa	Pressure, Stress	N/m2	m-1.kg.s-2
Coulomb	C	Electric charge or flux	A.s	A.s
Volt	V	Electrical potential difference, EMF	W/A = J/C	m2.kg.s-3.A-1
Ohm	Ω	Electric resistance, Impedance, Reactance	V/A	m2.kg.s-3.A-2
Farad	F	Electric capacitance	C/V	m-2.kg-1.s4.A2
Weber	Wb	Magnetic flux	J/A	m2.kg.s-2.A-1
Tesla	T	Magnetic flux density, magnetic induction	V.s.m-2 = Wbm-2	kg.s-2.A-1

Math:

Geometry

Circle of radius r: circumference $= 2\pi r$; area $= \pi r^2$.
Sphere of radius r: area $= 4\pi r^2$; volume $= \frac{4}{3}\pi r^3$.
Right circular cylinder of radius r and height h: area $= 2\pi r^2 + 2\pi rh$; volume $= \pi r^2 h$.

Quadratic Formula

If $ax^2 + bx + c = 0$, then $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$.

The moon

Mass	7.36×10^{22} kg
Radius	1738 km
Mean density	3340 kg/m³
Surface gravity	1.67 m/s²
Mean earth-moon distance	3.80×10^{5} km

The sun

Mass	1.99×10^{30} kg
Radius	6.96×10^{5} km
Mean density	1,410 kg/m³
Surface gravity	274 m/s²
Surface temperature	6000 K
Total radiation rate	3.92×10^{26} W

Constant	Symbol	Computational value
Speed of light in a vacuum	c	3.00×10^{8} m/s
Elementary charge	e	1.60×10^{-19} C
Electron rest mass	m_e	9.11×10^{-31} kg
Permitivity constant	ϵ_0	8.85×10^{-12} F/m
Permeability constant	μ_0	12.6×10^{-7} H/m
Electron charge to mass ratio	e/m_e	1.76×10^{11} C/kg
Proton rest mass	m_p	1.67×10^{-27} kg
Ratio of proton mass to electron mass	m_p/m_e	1840
Neutron rest mass	m_n	1.68×10^{-27} kg
Muon rest mass	m_μ	1.88×10^{-28} kg
Planck constant	h	6.63×10^{-34} J·s
Electron Compton wavelength	λ_C	2.43×10^{-12} m
Molar gas constant	R	8.31 J/mol·K
Avogadro constant	N_A	6.02×10^{23}/mol
Boltzmann constant	k	1.38×10^{-23} J/K
Molar volume of ideal gas at STP[c]	V_m	2.24×10^{-2} m³/mol
Faraday constant	F	9.65×10^{4} C/mol
Stefan–Boltzmann constant	σ	5.67×10^{-8} W/m²·K⁴
Rydberg constant	R	1.10×10^{7}/m
Gravitational constant	G	6.67×10^{-11} m³/s²·kg
Bohr radius	a_0	5.29×10^{-11} m
Electron magnetic moment	μ_e	9.28×10^{-24} J/T
Proton magnetic moment	μ_p	1.41×10^{-26} J/T
Bohr magneton	μ_B	9.27×10^{-24} J/T
Nuclear magneton	μ_N	5.05×10^{-27} J/T