

Constants

Universal Gravitational Constant	G	$6.67 \times 10^{-11} \text{ N m}^2/\text{kg}^2$
Ideal Gas (or Boltzmann's) Constant	k	$1.38 \times 10^{-23} \text{ Joule/K}$
		$8.62 \times 10^{-5} \text{ eV/K}$
Stefan-Boltzmann Constant.....	σ	$5.67 \times 10^{-8} \text{ W/m}^2 \text{ K}^4$
Gas Constant	R	8.31 J/mol K
Avogadro's Number.....	N_A	$6.02 \times 10^{23} \text{ molecule/mol}$
Coulomb Force Constant.....	k	$9.00 \times 10^9 \text{ N m}^2/\text{C}^2$
Fundamental Charge.....	e	$1.60 \times 10^{-19} \text{ C}$
Speed of Light in vacuum.....	c	$3.00 \times 10^8 \text{ m/s}$
Planck's Constant.....	h	$6.626 \times 10^{-34} \text{ J s}$
Planck's Constant/ 2π	\hbar	$1.055 \times 10^{-34} \text{ J s}$
Rydberg (Bohr atom) constant.....	R	$1.1 \times 10^7 \text{ m}^{-1}$

Some Physical Properties

Density of Water	$\rho_{\text{H}_2\text{O}}$	1 g/cm^3 or 1000 kg/m^3
Speed of Sound in dry Air at 1 atm and 20°C		343 m/s
	in Water at 1 atm and 20°C.....	1460 m/s
Earth's Gravitational Acceleration.....	g	9.81 m/s^2
Earth's Radius.....	r_E	$6.37 \times 10^6 \text{ m}$
Earth's Mass.....	m_E	$5.98 \times 10^{24} \text{ kg}$
Earth-Sun Distance (mean)	1 AU	$1.49 \times 10^8 \text{ km}$
Earth-Moon Distance (mean).....		$3.80 \times 10^5 \text{ km}$
Electron Rest Mass	m_e	$9.11 \times 10^{-31} \text{ kg}$
Proton Rest Mass	m_p	$1.67 \times 10^{-27} \text{ kg}$

Unit Conversions

1 mile = 1609 m	1 meter = 3.28 ft .	1 in = 2.54 cm
1 mph = 0.447 m/s	1 day = 86400 sec	1 year = 3.16×10^7 sec
π Radians = 180 degrees	1 mm Hg = 133 Pa	1 atm = 1.01×10^5 Pascals
1 N = 0.225 lb	1 kg weighs 2.21 lb	1 Horsepower = 746 W
1 Joule = 0.239 cal	1 eV = 1.60×10^{-19} J	