

Physical Constants

Acceleration due to gravity (g)	$9.80 \text{ m/s}^2 = 32 \text{ ft/s}^2$
Charge on Electron (e)	$1.602 \times 10^{-19} \text{ C}$
Mass of the electron	$9.11 \times 10^{-31} \text{ kg}$
Gravitational constant (G)	$6.672 \times 10^{-11} \text{ N}\cdot\text{m}^2/\text{kg}^2$
Electrical Constant (k)	$8.988 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$
Permittivity of free space (ϵ_0)	$8.85 \times 10^{-12} \text{ C}^2/\text{N}\cdot\text{m}^2$
Permeability of free space (μ_0)	$4\pi \times 10^{-7} \text{ T}\cdot\text{m/A}$
Speed of Light in vacuum (c)	$3.0 \times 10^8 \text{ m/s}$
Speed of Sound in air	330 m/s
Resistivity of Copper	$1.68 \times 10^{-8} \Omega\cdot\text{m}$

Conversion Constants**Length**

1 in. = 2.54 cm
1 m = 39.37 in. = 3.281 ft
1 ft = 0.3048 m
12 in. = 1 ft
3 ft = 1 yd
1 yd = 0.9144 m
1 km = 0.621 mi
1 mi = 1.609 km
1 Å = 10^{-10} m
1 mm = 10^{-3} m
1 μm = 10^{-6} m = 10^4 Å
1 lightyear = $9.461 \times 10^{15} \text{ m}$

Mass

1000 kg = 1 t (metric ton)
1000 g = 1 kg
1 slug = 14.59 kg
1 u = $1.66 \times 10^{-27} \text{ kg}$

Energy

1 J = 0.738 ft·lb = 10^7 erg
1 cal = 4.186 J
1 BTU = 252 cal = $1.054 \times 10^3 \text{ J}$
1 eV = $1.6 \times 10^{-19} \text{ J}$
931.5 MeV = 1 u
1 kW·h = $3.6 \times 10^6 \text{ J}$

Force

1 N = 10^5 dyne = 0.2248 lb
1 lb = 4.448 N
1 dyne = 10^{-5} N = $2.248 \times 10^{-6} \text{ lb}$

Velocity

1 mi/h = 1.47 ft/s = 0.447 m/s
1 mi/h = 1.61 km/h
1 m/s = 100 cm/s = 3.281 ft/s
1 mi/min = 60 mi/h = 88 ft/s

Acceleration

1 m/s ² = 3.28 ft/s ² = 100 cm/s ²
1 ft/s ² = 0.3048 m/s ² = 30.48 cm/s ²

Power

1 hp = 550 ft·lb/s = 0.746 kW
1 W = 1 J/s = 0.738 ft·lb/s
1 BTU/h = 0.293 W

Angle

$2\pi \text{ radians} = 360^\circ$
1 radian = 57.29578°
1° = 0.01745 rad