

## Fundamental constants

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Newton's constant:	$G = 6.6743 \times 10^{-11} \text{ m}^3/\text{kg s}^2$
Coulomb's constant:	$k = 8.9876 \times 10^9 \text{ kg m}^3/\text{C}^2 \text{ s}^2$
Speed of sound:	$v = 340 \text{ m/s}$
Hubble's constant:	$H = 0.022 \text{ (m/s)/ly}$
Age of Universe:	$1/H = 1.4 \times 10^{10} \text{ yr}$
Planck's constant:	$h = 6.626 \times 10^{-34} \text{ J s}$
Speed of light:	$c = 2.9979 \times 10^8 \text{ m/s}$
Mass of the electron:	$m_e = 9.1094 \times 10^{-31} \text{ kg}$
Mass of the proton:	$m_p = 1.6726 \times 10^{-27} \text{ kg} = 1.0073 \text{ u}$
Mass of the neutron:	$m_n = 1.6749 \times 10^{-27} \text{ kg} = 1.0087 \text{ u}$
Charge of the proton:	$e = 1.6022 \times 10^{-19} \text{ C}$
Charge of the electron:	$-e = -1.6022 \times 10^{-19} \text{ C}$
Fine structure constant:	$\alpha = 2\pi ke^2/hc = 1/137.036$
Bohr radius:	$a = h^2/4\pi^2 m_e e^2 = 5.2918 \times 10^{-11} \text{ m}$

## Conversion factors

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1 in	$= 2.54 \text{ cm}$
1 ly	$= 9.4605 \times 10^{15} \text{ m}$
1 pc	$= 3.0857 \times 10^{16} \text{ m}$
1 yr	$= 3.156 \times 10^7 \text{ s}$
1 u	$= 1.6605 \times 10^{-27} \text{ kg}$
1 MeV/c <sup>2</sup>	$= 1.7827 \times 10^{-30} \text{ kg}$
1 eV	$= 1.602 \times 10^{-19} \text{ J}$
1 kwh	$= 3.600 \times 10^6 \text{ J}$