

Fundamental Physical Constants {Physics (phy101)}

If the value of any constant is not given in question, use the value of this constant from this table.

Name	Symbol	Value
Speed of light	c	$2.99792458 \times 10^8 \text{ m/s}$
Planck constant	h	$6.6260755 \times 10^{-34} \text{ J}\cdot\text{s}$
Planck constant	h	$4.1356692 \times 10^{-15} \text{ eV}\cdot\text{s}$
Planck hbar	\hbar	$1.0545727 \times 10^{-34} \text{ J}\cdot\text{s}$
Planck hbar	\hbar	$6.582121 \times 10^{-16} \text{ eV}\cdot\text{s}$
Gravitation constant	G	$6.67259 \times 10^{-11} \text{ m}^3 \cdot \text{kg}^{-1} \cdot \text{s}^{-2}$
Acceleration due to gravity	g	9.80665 m s^{-2}
Boltzmann constant	k	$1.380658 \times 10^{-23} \text{ J/K}$
Boltzmann constant	k	$8.617385 \times 10^{-5} \text{ eV/K}$
Molar gas constant	R	$8.314510 \text{ J/mol}\cdot\text{K}$
Avogadro's number	N_A	$6.0221 \times 10^{23} \text{ mol}^{-1}$
Charge of electron	e	$1.60217733 \times 10^{-19} \text{ C}$
Permeability of vacuum	μ_0	$4\pi \times 10^{-7} \text{ N/A}^2$

Permittivity of vacuum	ϵ_0	$8.854187817 \times 10^{-12} \text{ F / m}$
Coulomb constant	$1 / 4\pi\epsilon_0 = K$	$8.987552 \times 10^9 \text{ N} \cdot \text{m}^2 / \text{C}^2$
Faraday constant	F	$96485.309 \text{ C / mol}$
Mass of electron	m_e	$9.1093897 \times 10^{-31} \text{ kg}$
Mass of electron	m_e	$0.51099906 \text{ MeV} / c^2$
Mass of proton	m_p	$1.6726231 \times 10^{-27} \text{ kg}$
Mass of proton	m_p	$938.27231 \text{ MeV} / c^2$
Mass of neutron	m_n	$1.6749286 \times 10^{-27} \text{ kg}$
Mass of neutron	m_n	$939.56563 \text{ MeV} / c^2$
Atomic mass unit	u	$1.6605402 \times 10^{-27} \text{ kg}$
Atomic mass unit	u	$931.49432 \text{ MeV} / c^2$
Avogadro's number	N_A	$6.0221367 \times 10^{23} / \text{mol}$
Stefan-Boltzmann constant	σ	$5.67051 \times 10^{-8} \text{ W} / \text{m}^2 \cdot \text{K}^4$
Rydberg constant	R_∞	$10973731.534 \text{ m}^{-1}$
Bohr magneton	μ_B	$9.2740154 \times 10^{-24} \text{ J} / \text{T}$
Bohr magneton	μ_B	$5.788382 \times 10^{-5} \text{ eV} / \text{T}$
Flux quantum	Φ_0	$2.067834 \times 10^{-15} \text{ T} / \text{m}^2$

Bohr radius	a_0	$0.529177249 \times 10^{-10} m$
Standard atmosphere	atm	101325 Pa
Wien displacement constant	b	$2.897756 \times 10^{-3} m \cdot K$