



VISUAL PHYSICS ONLINE

VALUES OF PHYSICAL QUANTITIES AND CONSTANTS

FUNDAMANETAL CONSTANTS

speed of light	c	3.00×10^8	m.s^{-1}
electron charge	e, q_e	1.602×10^{-19}	C
electron mass	m_e	9.109×10^{-31}	kg
proton mass	m_p	1.6726×10^{-27}	kg
neutron mass	m_n	1.6749×10^{-27}	kg
atomic mass unit (amu)	u	1.6605×10^{-27}	kg
Planck's constant	h	6.626×10^{-34}	J.s
permittivity of free space	ϵ_0	8.85×10^{-12}	$\text{C}^2.\text{N}^{-1}.\text{m}^{-2}$
Coulomb constant	$\frac{1}{4\pi\epsilon_0}$	8.85×10^{-12}	$\text{C}^2.\text{N}.\text{m}^{-2}$
permeability of free space	μ_0	$4\pi \times 10^{-7}$	$\text{T}.\text{m}.\text{A}^{-1}$
magnetic force constant	$k = \frac{\mu_0}{2\pi}$	2.0×10^{-7}	$\text{N}.\text{A}^{-2}$
acceleration due to gravity	g	9.81	m.s^{-2}
Gravitational constant	G	6.67×10^{-11}	$\text{N}.\text{m}^2.\text{kg}^{-2}$
Avogadro's number	N_A	6.02×10^{23}	mol^{-1}
Boltzmann's constant	k	1.38×10^{-23}	$\text{J}.\text{K}^{-1}$
Universal gas constant	R	8.315	$\text{J}.\text{mol}^{-1}.\text{K}^{-1}$

Stefan-Boltzmann constant	σ	5.67×10^{-8}	$\text{W.m}^{-2}.\text{K}^{-4}$
Rydberg constant	R	1.0974×10^7	m^{-1}

USEFUL DATA

absolute zero		0 K	-273.15 °C
Earth's mass	M_E	5.97×10^{24}	kg
Earth's radius	R_E	6.38×10^6	m
Moon's mass	M_m	7.35×10^{22}	kg
Moon's radius	R_M	1.74×10^6	m
Sun's mass	M_S	1.99×10^{30}	kg
Sun's radius	R_S	6.96×10^8	m
Distance: Earth – Sun	R_{ES}	1.496×10^{11}	m
Distance: Earth – Moon	R_{EM}	3.84×10^8	m

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If you have any feedback, comments, suggestions or corrections please email:

Ian Cooper School of Physics University of Sydney

ian.cooper@sydney.edu.au