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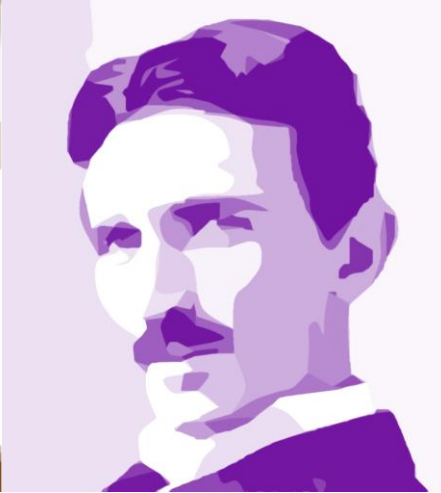
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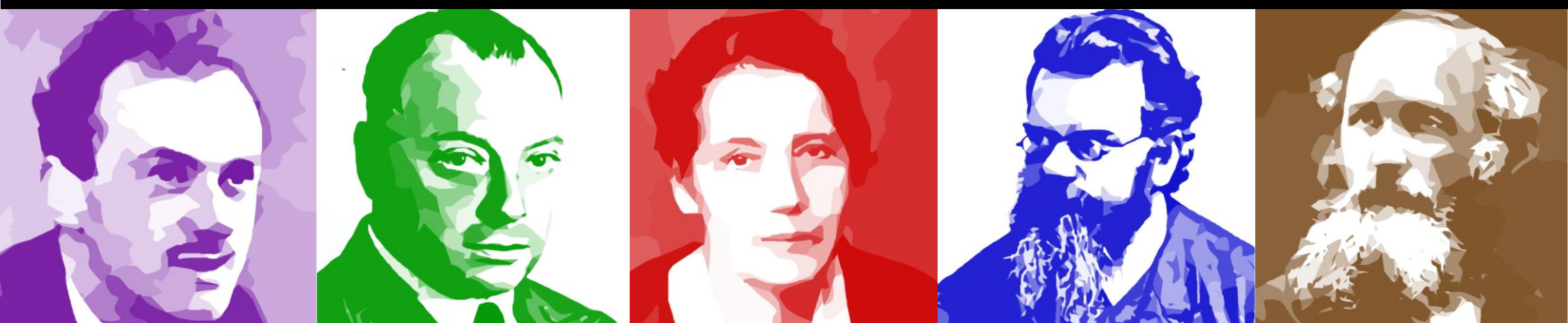
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Physical constants

Acceleration due to gravity	g	$9.81 \text{ m}\cdot\text{s}^{-2}$
Gravitational constant	G	$6.67 \times 10^{-11} \text{ N}\cdot\text{m}^2\cdot\text{kg}^{-2}$
Speed of light in a vacuum	c	$3.00 \times 10^8 \text{ m}\cdot\text{s}^{-1}$
Permittivity of free space	ϵ_0	$8.85 \times 10^{-12} \text{ F}\cdot\text{m}^{-1}$
Permeability of free space	μ_0	$4\pi \times 10^{-7} \text{ H}\cdot\text{m}^{-1}$
Electric force constant	k_e	$8.99 \times 10^9 \text{ N}\cdot\text{m}^2\cdot\text{C}^{-2}$
Planck constant	h	$6.63 \times 10^{-34} \text{ J}\cdot\text{s}$
Electron charge	e	$-1.60 \times 10^{-19} \text{ C}$
Atomic mass unit	u	$1.661 \times 10^{-27} \text{ kg}$
Electron mass	m_e	$9.109 \times 10^{-31} \text{ kg}$ 0.0005 u
Neutron mass	m_n	$1.675 \times 10^{-27} \text{ kg}$ 1.0087 u
Proton mass	m_p	$1.673 \times 10^{-27} \text{ kg}$ 1.0073 u
Avogadro constant	N_A	$6.02 \times 10^{23} \text{ mol}^{-1}$
Boltzmann constant	k_B	$1.38 \times 10^{-23} \text{ J}\cdot\text{K}^{-1}$
Ideal gas constant	R	$8.31 \text{ J}\cdot\text{mol}^{-1}\cdot\text{K}^{-1}$



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Units and dimensions

The five basic physical dimensions and their SI units are

Time	second (s)	
Length	metre (m)	
Mass	kilogram (kg)	
Temperature	kelvin (K)	
Electric current	ampere (A)	

Time	second, s	s
Frequency	hertz, Hz	s ⁻¹
Length	metre, m	m
Area	metre × metre	m ²
Volume	metre × metre × metre	m ³
Speed, velocity	metre / second	m·s ⁻¹
Acceleration	metre / (second × second)	m·s ⁻²
Mass	kilogram, kg	kg
Density	kilogram / (metre × metre × metre)	kg·m ⁻³
Force	newton, N	kg·m·s ⁻²
Energy, work, heat	joule, J (or N·m)	kg·m ² ·s ⁻²
Power	watt, W (or J·s ⁻¹)	kg·m ² ·s ⁻³
Pressure	pascal, Pa (or N·m ⁻²)	kg·m ⁻¹ ·s ⁻²
Temperature	kelvin, K	K
Electric current	ampere, A	A
Electric charge	coulomb, C	A·s
Potential difference	volt, V (or J·C ⁻¹)	kg·m ² ·A ⁻¹ ·s ⁻³
Resistance	ohm, Ω (or V·A ⁻¹)	kg·m ² ·A ⁻² ·s ⁻³



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