

Gravitacijska konstanta	$G = 6,67 \cdot 10^{-11} \frac{\text{Nm}^2}{\text{kg}^2}$
Astronomska enota	1 AU = 1 a.e. = $1,5 \cdot 10^8$ km
Svetlobno leto, parsek	1 ly = 1 sv.l. = $9,46 \cdot 10^{15}$ m; 1 pc = 3,26 sv.l.
Gostota vode	$\rho_{\text{voda}} = 1000 \frac{\text{kg}}{\text{m}^3}$
Normalni zračni tlak	$p_0 = 101,3$ kPa
Avogadrova konstanta	$N_A = 6,022 \cdot 10^{23} \text{ mol}^{-1} = 6,022 \cdot 10^{26} \text{ kmol}^{-1}$
Splošna plinska konstanta	$R = 8310 \text{ J/kmol K}$
Osnovni naboj	$e_0 = 1,60 \cdot 10^{-19} \text{ As}$
Konstanta v Coulombovem zakonu	$k = \frac{1}{4\pi\epsilon_0} = 8,99 \cdot 10^9 \frac{\text{Nm}^2}{(\text{As})^2}$
Električna (influenčna) konstanta	$\epsilon_0 = 8,85 \cdot 10^{-12} \frac{(\text{As})^2}{\text{Nm}^2} = 8,85 \cdot 10^{-12} \frac{\text{As}}{\text{Vm}}$
Magnetna (indukcijska) konstanta	$\mu_0 = 4\pi \cdot 10^{-7} \frac{\text{Vs}}{\text{Am}}$
Hitrost svetlobe v vakuumu	$c_0 = 3 \cdot 10^8 \frac{\text{m}}{\text{s}}$

Gibanje

$$m = \rho V$$

$$s = vt$$

$$a = \frac{\Delta v}{\Delta t}$$

$$v = v_z + at$$

$$s = \bar{v}t = v_z t + \frac{1}{2} at^2$$

$$v^2 = v_z^2 + 2as$$

$$v = \frac{1}{t_0}$$

$$v = \frac{2\pi r}{t_0} = 2\pi r v$$

$$a_r = \frac{v^2}{r}$$

Sile

$$F = kx$$

$$F_\ell = k_\ell F_N \quad F_{tr} = k_{tr} F_N$$

$$p = \frac{F}{S}$$

$$p = p_0 + \rho gh$$

$$F_{\text{vzgon}} = \rho_{\text{tek}} g V$$

$$\bar{F} = m\bar{a} \quad F_r = m a_r = m \frac{v^2}{r}$$

$$F_g = mg = G \frac{m_1 m_2}{r^2}$$

$$g = g_0 \left(\frac{R}{r} \right)^2, \quad r = R + h$$

Delo in energija

$$A = \vec{F} \cdot \vec{s} = Fs \cdot \cos \varphi$$

$$P = \frac{A}{t} = Fv$$

$$W_k = \frac{1}{2}mv^2$$

$$W_p = mgz \quad \Delta W_p = mgh = -A_g$$

$$W_{pr} = \frac{1}{2}kx^2$$

$$A = \Delta W_k + \Delta W_p + \Delta W_{pr} \rightarrow W_{k1} + W_{p1} + W_{pr1} + A = W_{k2} + W_{p2} + W_{pr2}$$

Toplota

$$n = \frac{N}{N_A} = \frac{m}{M}$$

$$\Delta \ell = \ell \alpha \Delta T$$

$$\Delta V = V \beta \Delta T \quad \beta = 3\alpha$$

$$\Delta S = S \cdot 2\alpha \cdot \Delta T$$

$$T(^{\circ}\text{C}) = \frac{5}{9} \cdot [T(^{\circ}\text{F}) - 32]$$

$$\frac{p_1 V_1}{T_1} = \frac{p_2 V_2}{T_2} = \text{konst.}$$

$$pV = nRT$$

$$Q = mc\Delta T = C\Delta T \quad C = mc$$

$$Q = mq_s \quad Q = mq_t \quad Q = mq_i$$

$$\Delta W_n = A + Q$$

$$P = \frac{Q}{t} \quad j = \frac{P}{S}$$

$$P = \lambda S \frac{\Delta T}{d} \quad \text{grad } T = \frac{\Delta T}{d}$$

Geometrijski liki in telesa

krogla: $S = 4\pi R^2$

$$V = \frac{4}{3}\pi R^3$$

Elektrika in magnetizem

$$e = Ne_0$$

$$F_e = k \cdot \frac{e_1 e_2}{r^2} = \frac{e_1 e_2}{4\pi\epsilon_0 r^2}$$

$$\vec{F} = e\vec{E} \quad E = k \cdot \frac{e}{r^2} = \frac{e}{4\pi\epsilon_0 r^2}$$

$$\sigma = \frac{e}{S} \quad E = \frac{\sigma}{2\epsilon_0} \text{ (ravnina)} \quad E = \frac{\sigma}{\epsilon_0} \text{ (kondenzator)}$$

$$U = \frac{A_e}{e} \quad E = \frac{U}{d}$$

$$e = CU \quad C = \epsilon_0 \frac{S}{d}$$

$$W_e = \frac{1}{2} CU^2 = \frac{e^2}{2C}$$

$$I = \frac{e}{t} \quad j = \frac{I}{S}$$

$$U = RI$$

$$I = GU$$

$$R_{\text{zap}} = R_1 + R_2 + \dots; \quad \frac{1}{R_{\text{vzp}}} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$

$$P = UI = I^2 R = \frac{U^2}{R}$$

$$A_e = Pt = eU$$

$$R = \frac{\zeta \ell}{S} \quad S = \frac{\pi d^2}{4}$$

$$F = I\ell B \cdot \sin \varphi$$

$$F_m = evB \cdot \sin \varphi$$

$$B = \mu_0 \frac{I}{2\pi r} \text{ (vodnik)}$$

$$B = \mu_0 \frac{N}{\ell} I \text{ (tuljava)}$$