PROSTI PAD

$$v = g \cdot t$$

$$h = \frac{g \cdot t^2}{2}$$

$$v(t) = -v \cdot t$$

$$h(t) = h - \frac{1}{2} \cdot g \cdot t^2$$

$$t = \sqrt{\frac{2h}{g}}$$

VODORAVNI MET

$$D = V_0 \cdot t$$

$$V_x = V_0$$

$$V_y = g \cdot t$$

$$v = \sqrt{V_x^2 + V_y^2}$$

$$h = \frac{g \cdot t^2}{2}$$

$$t = \sqrt{\frac{2h}{g}}$$

SILE NA KLANCU

$$F_s = N = F_g \cdot \cos\alpha$$

$$F_t = F_d = F_g \cdot \sin\alpha$$

$$F_t = k_t \cdot N$$

MEHANSKA ENERGIJA

$$\Delta E = W_{ME}$$

$$E_N = E_K + E_P + E_{PR}$$

$$E_K = \frac{1}{2} \cdot mv^2$$

$$E_P = mg\Delta h$$

$$E_{PR} = \frac{k \cdot \Delta x^2}{2}$$

KROŽENJE

$\omega(t) = \omega_0 + \alpha(t - t_0)$

$f(t) = f_0 + \omega_0(t - t_0) + \frac{1}{2}\alpha(t - t_0)^2$

$\omega^2 = \omega_0{}^2 + 2\alpha(\phi - \phi_0)$

$v(t) = V_0 + a(t - t_0) - gibanje$

$s(t) = S_0 + V_0\Delta t + \frac{1}{2}a\Delta t^2 - gibanje$

$S \rightarrow \phi; v \rightarrow \omega; a \rightarrow \alpha$

$a = \omega^2 \cdot r = \frac{v^2}{r}$

$v = \omega \cdot r$

$\omega = 2\pi f$

$f = \frac{1}{t}$

GIBALNA KOLIČINA IN SUNEK SILE

$p = m \cdot v$

$\Delta p = F\Delta t$

GRAVITACIJSKI ZAKON

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

$G = 6{,}67 \cdot 10^{-11} \frac{m^3}{kg \cdot s^2}$

NAVOR

$M = r \cdot F$

KOTALEČO TELO

$E_{PK} = E_K + E_{RK} = \frac{1}{2}mv^2 + \frac{1}{2}j\omega^2$

HOOK

$\delta = y \cdot \varepsilon = \frac{F}{A}$

$\varepsilon = \frac{\Delta x}{x}$

$F = k\Delta x$

$k = \frac{y \cdot A}{x}$

RAZTEZEK

$\Delta l = \alpha \cdot l_0 \cdot \Delta t$

$\Delta V = \beta \cdot V_0 - \Delta T$

PLINI

$$pV = \frac{m}{M} RT, \frac{m}{M} = n$$

DOPFLER

$$f_{spr} = f_{odd}\left(\frac{c \pm V_s}{c \pm V_0}\right)$$

ZVOK V TRDNI SNOVI

$$C_{fe} = \sqrt{\frac{E}{\delta}}$$

OHMOV ZAKON

$$U = RI$$

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

KONDENZATOR

$$C = \varepsilon \cdot \varepsilon_0 \cdot \frac{A(površina)}{d}$$

$$\varepsilon_0 = 8{,}85 \cdot 10^{-12}$$

$$E_E = \frac{1}{2} CU^2$$

$$q = \varepsilon_0 \frac{A}{d} U$$

UPORNOST ŽICE

$$R = \xi \frac{l}{A}$$

$$\xi = 1{,}7 \cdot 10^{-8} \Omega m$$

SILA NA NABOJ V MAG. POLJU

$$\vec{F}_m = q \vec{v} \times B$$

$$F_e = qE$$

$$|F| = q \cdot v \cdot B \cdot \sin \varphi$$

MAGNETNO POLJE

$$B = \frac{I_1 \mu_0}{2\pi \cdot r}$$

MAGNETNA INDUKCIJA

$$\phi m(t) = AB \sin \omega t$$

$$U_1 = \omega AB \cos \omega$$

MAGNETNI PRETOK

$$\Phi m = AB \sin \omega t$$

$$\Phi m = AB$$

$$\Phi m = NBA$$

NAVOR NA ZANKO V MAG. POLJU

$$\vec{M} = \vec{r} \times \vec{F}$$

$$M = NBAI$$

SILA NA TOKOVODNIK

$$\vec{F}_m = I \cdot \vec{l} \times \vec{B}$$

$$F_m = I \cdot l \cdot B \cdot \sin \alpha$$

DOLGA TULJAVA (GOSTOTA)

$$B = \mu_0 \frac{N \cdot I}{l}$$

KRATKA TULJAVA (GOSTOTA)

$$B = \mu_0 \frac{N \cdot I}{\sqrt{l^2 - (2r)^2}}$$

NIHALO

$$t_0 = 2\pi \sqrt{\frac{l}{g}}$$

$$\frac{F}{F_g} = \sin \varphi$$

VZMETNO NIHALO

$$F = -kx$$

$$x = \frac{k}{m} x = -\omega^2 x$$

$$\omega = \sqrt{\frac{k}{m}}$$

$$t = 2\pi \sqrt{\frac{m}{k}}$$

NIHANJE

$y(t) = y_0 \cdot \sin(\omega t)$

$v(t) = y_0 \cdot \omega \cdot \cos(\omega t)$

$a(t) = y_0 \omega^2 \cdot \sin(\omega t)$

$\omega = 2\pi f$

$V_0 = y_0 \omega$

$a_0 = y \omega^2$

VZGON

$F_{VZG} = \delta \cdot V \cdot g$

VALOVANJE

$V_0 = \omega \cdot y_0$

$a_0 = \omega^2 \cdot y_0$

$c = \frac{\lambda}{t}$

UKLONSKA MREŽICA

$\lambda = \frac{d \cdot \sin \alpha}{N}$

ZBIRALNALEČA

$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$

$povečove = \frac{S(slika)}{P(predmet)} = \frac{b}{a}$

LOMNI ZAKON

$\frac{\sin \alpha}{\sin \beta} = \frac{n_2}{n_1} = \frac{c_1}{c_2}$

$\alpha_0 = \arcsin \frac{n_2}{n_1} = mejnikot$

$\alpha_0 < \alpha - odboj$

PREVAJANJETOPLOTE

$\Delta T = R \cdot P$

$R = \frac{d}{\lambda A}$

$P = \frac{\lambda \cdot A \cdot \Delta T}{d}$