

Formelark for tres og y-vei

Mekanikk

$$\vec{v}(t) = \vec{s}'(t)$$

$$\vec{a}(t) = \vec{v}'(t)$$

$$v = v_0 + at$$

$$s = \frac{v_0 + v}{2} \cdot t$$

$$s = v_0 t + \frac{1}{2} at^2$$

$$2as = v^2 - v_0^2$$

$$x = v_{0x}t + \frac{1}{2}a_x t^2, v_x = v_{0x} + a_x t$$

$$y = v_{0y}t + \frac{1}{2}a_y t^2, v_y = v_{0y} + a_y t$$

$$a = \frac{v^2}{r} = \frac{4\pi^2 r}{T^2}$$

$$\Sigma \vec{F} = 0 \quad \text{hvis } \vec{v} = \text{konstant}$$

$$\Sigma \vec{F} = m\vec{a}$$

$$\Sigma F_x = ma_x \quad \Sigma F_y = ma_y$$

$$\vec{F}' = -\vec{F}$$

$$\vec{p} = m\vec{v}$$

$$\vec{p}_{\text{etter}} = \vec{p}_{\text{før}}$$

$$W = \vec{F} \cdot \vec{s} = Fs \cos \alpha$$

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

$$E_p = mgh$$

$$E = E_p + E_k$$

$$P = \frac{W}{t} = \frac{E}{t}$$

$$F = kx$$

$$E_p = \frac{1}{2}kx^2$$

$$\vec{G} = m\vec{g}$$

$$M = aF$$

$$M = aF \sin \varphi$$

$$\Sigma \vec{F} = 0 \quad \text{og} \quad \Sigma M = 0$$

$$x_T = \frac{x_1 m_1 + x_2 m_2 + \dots + x_n m_n}{m_1 + m_2 + \dots + m_n}$$

Lys og bølger

$$n = \frac{\sin \alpha_0}{\sin \alpha} = \frac{c_0}{c}$$

$$\alpha_i = \alpha_r$$

$$n_1 \sin \alpha_1 = n_2 \sin \alpha_2$$

$$\sin \alpha_g = \frac{n_2}{n_1}$$

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

$$v = f\lambda$$

$$S_2 P - S_1 P = n\lambda$$

$$d \sin \theta_n = n\lambda, \quad n = 0, 1, 2, 3, \dots$$

Termofysikk

$$T = 273 \text{ K} + t$$

$$Q = C \cdot \Delta T$$

$$Q = m \cdot c \cdot \Delta T$$

$$Q = l \cdot m$$

$$\Delta U = Q + W$$

$$f = \frac{Q_H}{W} = \frac{P}{P_c}$$

Elektrisitet

$$I = \frac{Q}{t}$$

$$U = \frac{W}{q}$$

$$R = \frac{U}{I}$$

$$P = UI$$

$$R_s = R_1 + R_2 + \dots + R_n$$

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \dots + \frac{1}{R_n}$$

$$\mathcal{E} = U_p + R_i I = (R_y + R_i) I$$

$$W = P \cdot t = U \cdot I \cdot t$$

Atom og kjernefysikk

$$E_f = hf$$

$$E_n = -\frac{B}{n^2}$$

$$\Delta E = mc^2$$

$$A(t) = A_0 \left(\frac{1}{2}\right)^{t/t_{1/2}}$$

$$N(t) = N_0 \left(\frac{1}{2}\right)^{t/t_{1/2}}$$

Væsker og gasser

$$F_o = \rho \cdot V \cdot g$$

$$p = p_0 + \rho gh$$

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

$$pV = NkT$$

$$N = \frac{m}{m_x}$$

$$U = \frac{1}{2}mv^2 = \frac{3}{2}NkT$$