

Formler, konstanter og enheter

$$P = Q / t \qquad Q = P \cdot t \qquad Q = c \cdot m \cdot \Delta T \qquad Q = l \cdot m$$

$$\Phi = p_d / p_m \qquad x = 0,622 \frac{p_d}{p_0 - p_d} \qquad h = 1,0 \cdot t + (1,86 \cdot t + 2501,6) \cdot x$$

$$X = \Delta x \cdot m \qquad Q = \Delta h \cdot m \qquad h = \frac{h_1 m_1 + h_2 m_2}{m_1 + m_2} \qquad x = \frac{x_1 m_1 + x_2 m_2}{m_1 + m_2}$$

$$\Delta L = \alpha L_0 \Delta T \qquad L = L_0 (1 + \alpha \Delta T) \qquad \Delta V = \gamma V_0 \Delta T \qquad V = V_0 (1 + \gamma \Delta T) \qquad \gamma \approx 3\alpha$$

$$T[\text{K}] = t[^\circ\text{C}] + 273 \text{ K} \qquad t[^\circ\text{C}] = T[\text{K}] - 273 \text{ }^\circ\text{C}$$

$$pV = nRT \qquad pV = NkT \qquad (n = N/N_A)$$

$$v_{rms} = \sqrt{\frac{3kT}{m}} \qquad U = \frac{2n+1}{2} NkT$$

$$p = p_0 + \rho gh \qquad \pi V = i nRT$$

$$U = RI \qquad (1\Omega = 1V / A) \qquad P = UI \qquad (P = I^2 R \quad P = U^2 / R) \qquad W = UIt$$

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

$$U_s/U_p = N_s/ N_p \quad \text{og} \quad U_s I_s = U_p I_p$$

$$n_1 \cdot \sin v_1 = n_2 \cdot \sin v_2 \qquad c_1 \cdot n_1 = c_2 \cdot n_2 \qquad c = \lambda \cdot f \qquad E = h \cdot f$$

Fysiske konstanter

lydfart i luft ved 0 °C	$v_0 = 332 \text{ m/s}$	protonets masse	$m_p = 1,6726 \cdot 10^{-27} \text{ kg}$
lysfart i vakuum	$c_0 = 2,998 \cdot 10^8 \text{ m/s}$	nøytronets “	$m_n = 1,6749 \cdot 10^{-27} \text{ kg}$
tyngdens akselerasjon	$g_n = 9,80665 \text{ m/s}^2$	elektronets “	$m_e = 9,1094 \cdot 10^{-31} \text{ kg}$
Boltzmanns konstant	$k = 1,3807 \cdot 10^{-23} \text{ J/K}$	Molar gasskonst.	$R = 8,3145 \text{ J/(mol} \cdot \text{K)}$
Avogados konstant	$N_A = 6,0221 \cdot 10^{23} \text{ mol}^{-1}$	Plancks konstant	$h = 6,6261 \cdot 10^{-34} \text{ Js}$

Enheter

$$1 \text{ mm} = 1,0 \cdot 10^{-3} \text{ m} \qquad 1 \mu\text{m} = 1,0 \cdot 10^{-6} \text{ m} \qquad 1 \text{ nm} = 1,0 \cdot 10^{-9} \text{ m} \qquad 1 \text{ \AA} = 1,0 \cdot 10^{-10} \text{ m}$$

$$\begin{array}{llll} 1 \text{ J} = 1 \text{ kg m}^2/\text{s}^2 & 1 \text{ kJ} = 1000 \text{ J} & 1 \text{ J} = 1 \text{ Ws} & 1 \text{ J} = 1 \text{ VAs} \\ 1 \text{ kWh} = 3,6 \cdot 10^6 \text{ J} & 1 \text{ cal} = 4,2 \text{ J} & 1 \text{ J} = 1 / 3,6 \cdot 10^6 \text{ kWh} & \end{array}$$

$$1 \text{ W} = 1 \text{ J/s} (= 1 \text{ kg m}^2/\text{s}^3) \qquad 1 \text{ W} = 1 \text{ VA} \qquad 1 \text{ kW} = 1000 \text{ W} (= 1 \text{ kJ/s}) \qquad 1 \text{ Hk} = 735 \text{ W}$$

$$1 \text{ N} = 1 \text{ kg m/s}^2$$

$$\begin{array}{ll} 1 \text{ Pa} = 1 \text{ N/m}^2 = 1 \text{ kg /s}^2\text{m} & 1 \text{ kPa} = 1000 \text{ Pa} \\ 1 \text{ atm.} = 101,3 \text{ kPa} (= 1,013 \cdot 10^5 \text{ Pa}) & 1 \text{ bar} = 100 \text{ kPa} (= 100.000 \text{ Pa} \approx 1 \text{ atm.}) \end{array}$$

$$1 \text{ mbar} = 100 \text{ Pa}$$

$$1 \text{ mmHg} = 133,3 \text{ Pa} \quad (1 \text{ torr} = 1 \text{ mmHg})$$