

Physics Formula Sheet

$$v = \frac{\Delta x}{\Delta t} = \frac{s}{t}$$

$$a = \frac{v - v_0}{\Delta t}$$

$$x = x_0 \pm vt$$

$$x = x_0 \pm v_0 t \pm \frac{at^2}{2}$$

$$v = v_0 \pm at$$

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

$$s = \frac{v^2 - v_0^2}{2a}$$

$$\Delta(m_1 \vec{v}_1 + m_2 \vec{v}_2) = 0$$

$$a = \frac{F}{m}$$

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

$$P = m(g \pm a)$$

$$a_k = \omega^2 r = \frac{v^2}{r}$$

$$F_h = \mu N$$

$$F_r = m g$$

$$F_e = -k \Delta l$$

$$A = F s \cos \alpha$$

$$N = \frac{A}{t}$$

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

$$p = \rho g h$$

$$F_{\vec{u}} = \rho V g$$

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

$$E_p = m g h$$

$$E = E_k + E_p$$

$$\varphi = \omega t$$

$$v = \omega r$$

$$\omega = 2\pi f = \frac{2\pi}{T}$$

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

$$v = \lambda f$$

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

$$E = \frac{F}{q}$$

$$F = k \frac{q_1 q_2}{r^2}$$

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

$$\varphi = \frac{E_p}{q}$$

$$E = \frac{U}{d}$$

$$U = \varphi_1 - \varphi_2$$

$$B = \frac{F}{I l}$$

$$F = K \frac{I_1 I_2}{r} l$$

$$F = B I l \sin \alpha$$

$$F_L = q v B \sin \alpha$$

$$\frac{\sin \alpha}{\sin \gamma} = n$$

$$n = \frac{c}{v}$$

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

$$c = \lambda f$$

$$E = h f$$

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

$$I = \frac{\mathcal{E}}{R + r}$$

$$A = I U \Delta t$$

$$N = I U$$

$$T = t(^{\circ}\text{C}) + 273 \text{ K}$$

$$E_k = \frac{3}{2} k_B T$$

$$p = n k_B T$$

$$p V = \frac{m}{M} R T$$

$$Q = c m \Delta t$$

$$Q = \lambda m$$

$$Q = L m$$

$$Q = r m$$

$$Q = \Delta U + A$$

$$A = p \Delta V$$

$$E = m c^2$$

$$g = 9,81 \text{ m/s}^2 \text{ (N/kg)}$$

$$c = 3 \times 10^8 \text{ m/s}$$

$$h = 6,626 \times 10^{-34} \text{ J s}$$

$$e = 1,602 \times 10^{-19} \text{ C}$$

$$1 \text{ eV} = 1,602 \times 10^{-19} \text{ J}$$

$$G = 6,674 \times 10^{-11} \text{ N m}^2/\text{kg}^2$$

$$k = 9 \times 10^9 \text{ N m}^2/\text{C}^2$$

$$K = 2 \times 10^{-7} \text{ N/A}^2$$

$$k_B = 1,38 \times 10^{-23} \text{ J/K}$$

$$R = 8,31 \text{ J/(K} \cdot \text{mol)}$$