Physics Formulas

Kinematics and Dynamics

$$T = \frac{1}{f} \qquad T = 2\pi\sqrt{\frac{m}{k}} \qquad T = 2\pi\sqrt{\frac{\ell}{g}}$$

$$c^2 = a^2 + b^2 \qquad c^2 = a^2 + b^2 - 2ab\cos C \qquad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$\vec{d} = \vec{v}_i t + \frac{1}{2}\vec{a}t^2 \qquad \vec{d} = \frac{1}{2}(\vec{v}_i + \vec{v}_f)t \qquad \vec{v} = \frac{\Delta\vec{d}}{\Delta t} \qquad v_f^{\,2} = v_i^{\,2} + 2ad$$

$$\vec{v}_f = \vec{v}_i + \vec{a}t \qquad \vec{a} = \frac{\Delta\vec{v}}{\Delta t} \qquad \vec{F} = m\vec{a}$$

Mechanical Energy

$$E_k = \frac{1}{2}mv^2 \qquad E_g = mgh \qquad W = \Delta E \qquad W = Fd$$

$$W = Fd\cos\theta \qquad P = \frac{W}{t} \qquad P = F(v_{av}) \qquad E_p = \frac{1}{2}kx^2$$

Electricity

$$Q = Ne \qquad I = \frac{Q}{t} \qquad F = \frac{kQ_1Q_2}{d^2} \qquad \vec{E} = \frac{\vec{F}}{Q} \qquad E = VIt$$

$$V = \frac{W}{Q} \qquad V = \frac{Fd}{Q} \qquad V = Ed \qquad V = IR \qquad R = \rho\left(\frac{L}{A}\right)$$

$$R_T = R_1 + R_2 + R_3 + \ldots + R_n \qquad \frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_n}$$

$$P = \frac{E}{t} \qquad P = VI \qquad P = I^2R \qquad P = \frac{V^2}{R}$$

Nuclear Physics

$$E = mc^2 \qquad E = h\nu$$