

КИНЕМАТИКА

$$\vec{s} = \vec{r}_2 - \vec{r}_1$$

$$\vec{v} = \frac{\vec{s}}{\Delta t} = \frac{\Delta \vec{r}}{\Delta t}$$

$$\vec{a} = \frac{\Delta \vec{v}}{\Delta t}$$

$$v_{\text{cp}} = \frac{S_{\text{всех}}}{t_{\text{всех}}}$$

$$\vec{v}_{\text{абс}} = \vec{v}_{\text{пер}} + \vec{v}_{\text{отн}}$$

$$\vec{v}_{1,2} = \vec{v}_1 - \vec{v}_2$$

$$a = 0; v = \text{const}; x(t) = x_0 + vt$$

$$v(t) = v_0 + at; x(t) = x_0 + v_0 t + \frac{at^2}{2}$$

$$\vec{v}(t) = \vec{v}_0 + \vec{a}t; \vec{r}(t) = \vec{r}_0 + \vec{v}_0 t + \frac{\vec{a}t^2}{2}$$

$$\begin{cases} v_x(t) = v_0 + a_x t; x(t) = x_0 + v_{0x} t + \frac{a_x t^2}{2} \\ v_y(t) = v_{0y} + a_y t; y(t) = y_0 + v_{0y} t + \frac{a_y t^2}{2} \end{cases}$$

$$2aS = v_2^2 - v_1^2$$

$$v_{\text{cp}} = \frac{v_2 + v_1}{2}$$

$$x(t) = x_0 + v_0 \cos \alpha \cdot t; y(t) = y_0 + v_0 \sin \alpha \cdot t - \frac{gt^2}{2}$$

$$h_{\text{max}} = \frac{1}{2g} v_0^2 \sin^2 \alpha \quad l = \frac{v_0^2 \sin 2\alpha}{g}$$

$$y(t) = v_0 \sin \alpha \cdot t - \frac{gt^2}{2}$$

$$v = \omega R; a_n = \omega^2 R = \frac{v^2}{R}; T = \frac{2\pi}{\omega}; \nu = \frac{1}{T}$$