



$$\vec{v}_0 = [0, h, 0]$$

$$\vec{v}_1 = [s, 0, 0]$$

$$v_0 = \text{const}$$

$$v_k = 0 + g \cdot t$$

$$v_k = g \cdot t$$

$$v_0 = g \cdot t$$

$$t = \frac{v_0}{g}$$

$$s = v_0 \cdot t$$

$$s = v_0 \cdot \frac{v_0}{g}$$

$$s = \frac{v_0^2}{g} \left[ \frac{\text{m}}{\text{s}} \cdot \frac{\text{m}}{\text{s}} \cdot \frac{\text{s}^2}{\text{m}} \right] = [\text{m}]$$

$$s = \frac{v_0^2}{g} \quad \text{— ZASIEG RZUTU}$$

$$\alpha = -\frac{\pi}{4}$$

$$\pi = 180^\circ$$

$$\alpha = -45^\circ$$

$$\vec{v} = \vec{v}_0 + \vec{v}_k$$

$$\frac{v_0}{v} = \cos \alpha$$

$$\cos 45^\circ = \frac{1}{\sqrt{2}}$$

$$v = v_0 \cdot \frac{1}{\cos \alpha}$$

$$\frac{v_k}{v} = \sin \alpha$$

$$v = v_k \cdot \frac{1}{\sin \alpha}$$

$$v = \sqrt{2} \cdot v_0$$

$$v = \sqrt{2} \cdot v_k$$

$$\sqrt{2} \cdot v_0 = \sqrt{2} \cdot v_k$$

$$v_0 = v_k$$

$$x = v_0 \cdot t$$

$$y = h - \frac{g \cdot t^2}{2}$$

$$s = \frac{v_0^2}{g}$$

$$s = \frac{v_0^2}{g}$$

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$$\begin{cases} x = v_0 \cdot t \\ y = h - \frac{g}{2} t^2 \end{cases}$$

$$\begin{cases} x^2 = v_0^2 \cdot t^2 \\ y = h - \frac{g}{2} t^2 \end{cases}$$

$$\begin{cases} t^2 = \frac{x^2}{v_0^2} \\ \frac{g}{2} t^2 = h - y \quad | \cdot 2 \quad | : g \end{cases}$$

$$\begin{cases} t^2 = \frac{x^2}{v_0^2} \\ t^2 = \frac{2(h-y)}{g} \end{cases}$$

$$\frac{2(h-y)}{g} = \frac{x^2}{v_0^2} \quad | \cdot g$$

$$2h - 2y = \frac{x^2}{v_0^2} \cdot g \quad | \cdot 2$$

$$h - y = \frac{x^2}{2v_0^2} \cdot g$$

$$y = h - \frac{x^2}{2v_0^2} \cdot g$$

ROZWIĄZANIE TORU RUCHU