$a_y = g$

$a_y = \frac{dv_y}{dt} \quad | \cdot dt$

$v_y = \int a_y \, dt \quad | a_y = g$

$v_y = \int g \, dt$

$v_y = g \cdot t + v_0 \quad | v_0 = 0$

$\underline{\underline{v_y = gt}}$

$y = \int v_y \, dt \quad | v_y = gt$

$y = \int (gt) \, dt$

$y = \frac{g}{2} t^2 + y_0 \quad | y_0 = 0$

$y = \frac{g}{2} t^2$

$y = \frac{g}{2} \left(\frac{x}{v_{0x}} \right)^2$

$\underline{\underline{y = \frac{g x^2}{2 v_{0x}^2}}}$

$a_x = 0 \quad | a = \frac{dv_x}{dt}$

$\frac{dv_x}{dt} = 0 \quad | \cdot dt$

$\int dv_x = \int 0 \, dt$

$v_x = 0 \cdot t + v_{0x}$

$\underline{\underline{v_x = v_{x0}}}$

$x = \int v_{x0} \, dt$

$\underline{\underline{x = v_{x0} \cdot t}}$

$| t = \frac{x}{v_{0x}}$

Beispiele:

Freier Fall