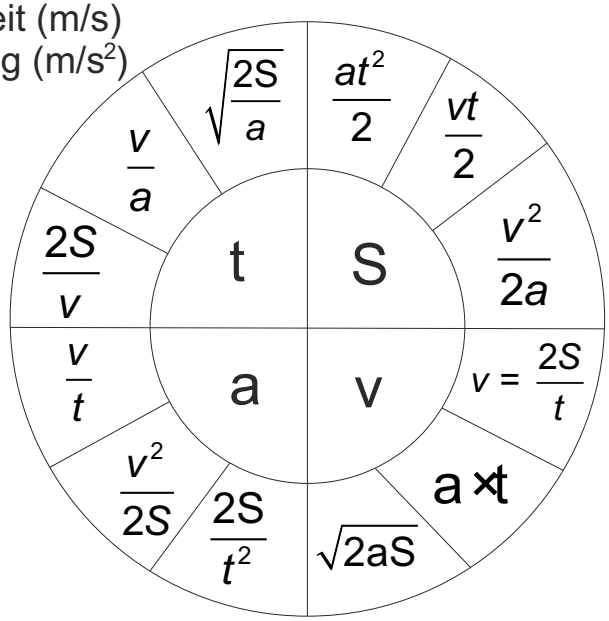
v - Geschwindigkeit (m/s)
a - Beschleunigung (m/s²)
S - Strecke (m)
t - Zeit (s)

km/h ⟷ m/s (:3,6 / ×3,6)



km ⟷ m (×1000 / :1000)

cm ⟷ m (:100 / ×100)

mm ⟷ m (:1000 / ×1000)

Std ⟷ Sek (×3600 / :3600)

Schräger Wurf

a = WINKEL ALPHA

$x = v_0 t \cos a$

$y = -\frac{g}{2}t^2 + v_0 t \sin a$

$y = \tan a \, x - \frac{g}{2v_0^2 \cos^2 a} x^2$

$v_{in\ jedem\ Punkt} = \sqrt{v_0^2 + g^2 t^2 - 2 v_0 g t \sin a}$

$L_{Länge\ Max} = \frac{v_0^2 \sin 2a}{g}$

$v_0 = \sqrt{\frac{gL}{\sin^2 a}}$

$H_{Höhe\ Max} = \frac{v_0^2 \sin^2 a}{2g}$

$v_0 = \sqrt{\frac{2gH}{\sin^2 a}}$

$t_{H(Steigzeit)} = \frac{v_0 \sin a}{g}$

$t_{gesamt} = \frac{2 v_0 \sin a}{g}$

bei StartHöhe h:

$t_{gesamt} = \frac{v_0 \sin a}{g} + \sqrt{\frac{4h^2 + v_0^2 \sin^2 a}{g^2}}$

Senkrechter Wurf

$y = \pm v_0 t - \frac{g}{2}t^2$

$v = \pm v_0 - gt$; $\pm v_0 = v + gt$; $t = \frac{\pm v_0 - v}{g}$

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

$S_H = \frac{v_0^2}{2g}$; $v_0 = \sqrt{2 S_H g}$; $g = \frac{v_0^2}{2 S_H}$

Freier Fall

$H = \frac{gt^2}{2}$

$H = \frac{v^2}{2g}$

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

$g = \frac{v^2}{2H}$

$v = gt$

$v = \sqrt{2gH}$

$t = \sqrt{\frac{2H}{g}}$

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

Fallschirm:

$H = \frac{gt^2_{ohne}}{2} + Vt_{mit}$

$g = 2\frac{H_2 - H_1}{t_2^2 - t_1^2}$

Waagerechter Wurf

$x = v_0 t$ *konstante Bew.*

$y = -\frac{gt^2}{2} + h_0$

$y = -\frac{gx^2}{v_0^2} + h_0$

$v_X = v_0$

$v_Y = g \times t$

$\cos a = \frac{v_0}{v_0^2 + g^2 t^2}$

$\tan a = \frac{v_Y}{v_X} = \frac{g \times t}{v_0}$

$a_{Winkel\ zu\ X\text{-}Achse} = tan^{-1}(\frac{g \times t}{v_0})$

$L_{Länge} = v_0 \times \sqrt{\frac{2H}{g}}$

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

$v_0 = \frac{L}{t} = L \times \sqrt{\frac{g}{2H}}$

$v = \sqrt{v_0^2 + g^2 t^2}$;

$t_{Fall} = \frac{\sqrt{v^2 - v_0^2}}{g} = \sqrt{\frac{2H}{g}}$

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