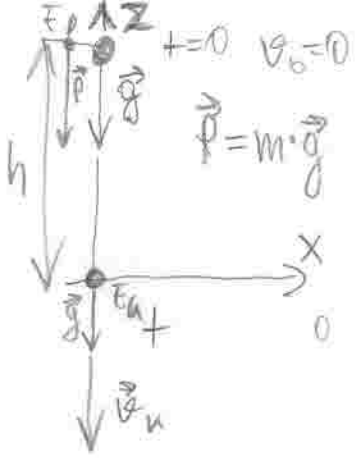

$h = v_0 \cdot t + \frac{gt^2}{2}$; $v_0 = 0$

$h = \frac{gt^2}{2} \quad / \cdot 2$

$2h = gt^2$

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

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

$v_k = v_0 + g \cdot t$; $v_0 = 0$

$v_k = g \cdot t$

$\vec{v}_k = \vec{g} \cdot t$

$\vec{v}_k = [v_{kx}, v_{ky}, v_{kz}]$

$v_{kx} = 0 \quad v_{ky} = 0 \quad v_{kz} = -g \cdot t$

$|\vec{v}_k| = \sqrt{(-g \cdot t)^2}$

$v_k = g \cdot t$

$g = 9{,}81 \left[\frac{m}{s^2}\right]$

$E_p = mgh \qquad E_k = \frac{m \cdot v_k^2}{2}$

$mgh = \frac{m v^2}{2}$

Energia potencjalna zamienia się na energię kinetyczną

$mgh = \frac{1}{2} m \cdot v_k^2 \quad / \cdot m$

$gh = \frac{1}{2} v_k^2 \quad / \cdot 2$

$2gh = v_k^2$

$v_k = \sqrt{2gh}$

$v_k = g \cdot t$

$v_k = g \cdot \sqrt{\frac{2h}{g}}$

$v_k = \sqrt{g^2 \cdot \frac{2h}{g}}$

$v_k = \sqrt{2gh}$