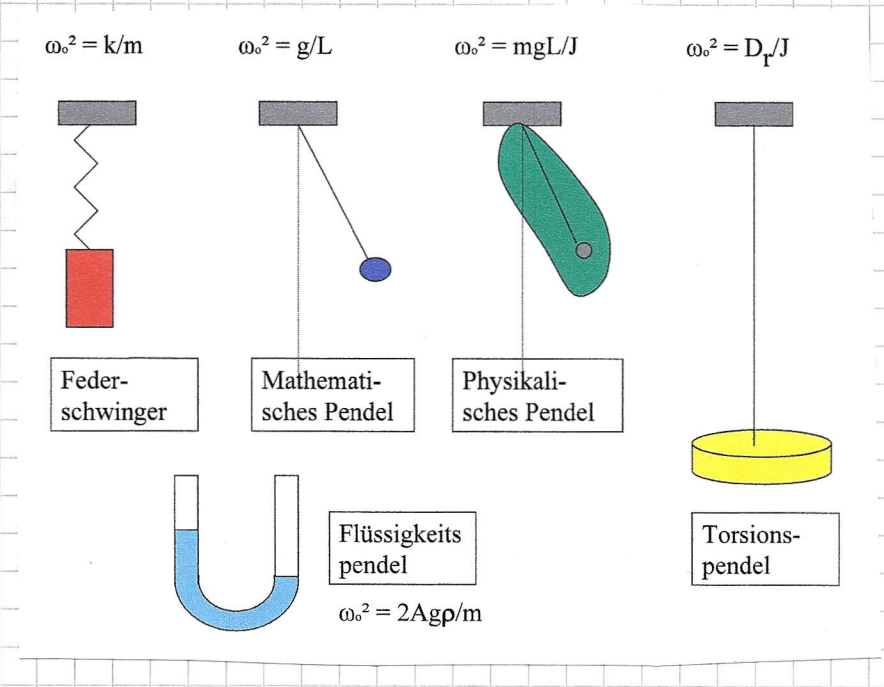
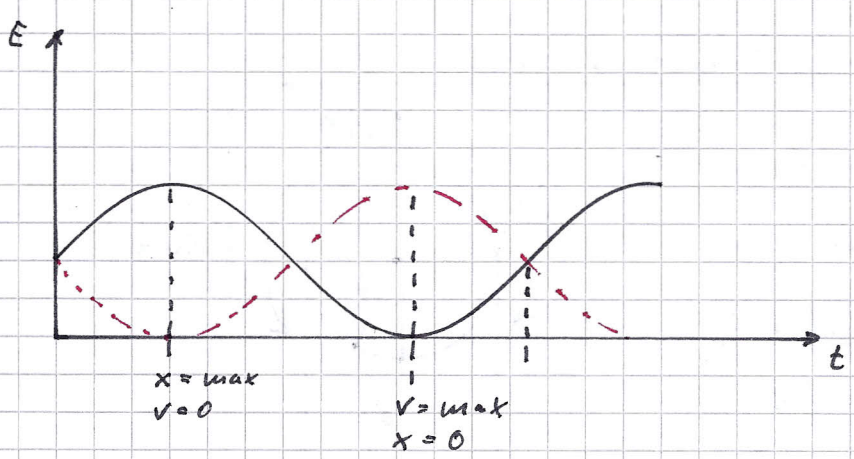


$E_{ges} = E_{pot} + E_{kin} = const$



$\frac{1}{2} k x^2 = \frac{1}{2} m v^2 = \frac{1}{2} m \omega^2 x^2$

Verlauf der kinetischen und Potentiellen Energie

$E_{pot} = \frac{1}{2} k x^2 = \frac{1}{2} k \hat{x}^2 \cos^2(\omega t)$

$E_{kin} = \frac{1}{2} m v^2 = \frac{1}{2} m \hat{v}^2 \sin^2(\omega t)$