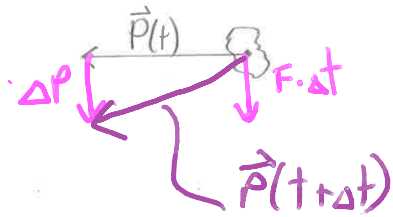


Newton's Law

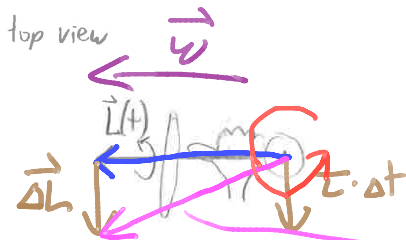


$\vec{p} = m \cdot \vec{v}$ linear momentum

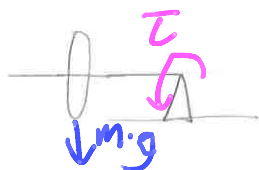
$\frac{d\vec{p}}{dt} = \Sigma F$

$\frac{\Delta p}{\Delta t} \approx \Sigma F \Rightarrow \Delta \vec{p} = \Delta t \cdot \Sigma F$

Euler's Law



side view



$\vec{L} = I \vec{\omega}$ angular momentum
 angular velocity $\omega / ||\omega|| = \text{axis}$
 $||\omega|| = \text{angular speed}$
 rad/s

$\frac{d\vec{L}}{dt} = \Sigma \tau$ τ : torques

$\frac{\Delta L}{\Delta t} \approx \Sigma \tau \Rightarrow \Delta \vec{L} = \Delta t \cdot \vec{\tau}$

$L(t + dt)$
 prediction: gravity acting on gyro will cause counter-clockwise movement
 "precession"