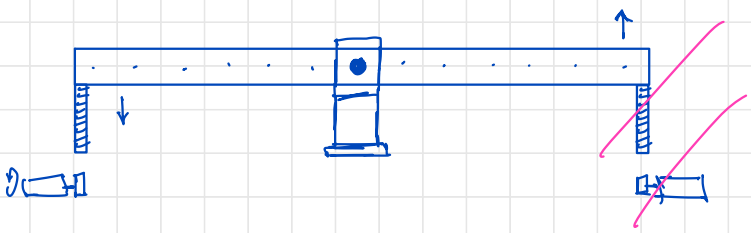

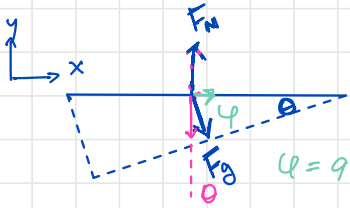

$\varphi = 90 - \theta$

$\frac{dp}{dt} = \sum F$

$m\frac{dv}{dt} = F_y + F_x$ ↗ won't change

$m\frac{dv}{dt} = F_g \sin\theta = F_g \cos\varphi$

$m\frac{dv}{dt} = mg\cos\varphi = mg\sin\theta$

$\frac{dv}{dt} = g\cos\varphi = g\sin\theta$

$\sum F_x = F_{gx}$ $\quad \cos\varphi = \frac{F_{gx}}{F_g}$

$\sum F_x = F_g \cos\varphi$

$= F_g \sin\theta$

$g\sin(v)$

$\frac{dv}{dt} = g\sin(\theta(t))$

$\sin\theta = \frac{h}{L}$ $\quad \theta = \sin^{-1}\left(\frac{h}{L}\right)$

$\frac{dv}{dt} = g\frac{h(t)}{L}$

0