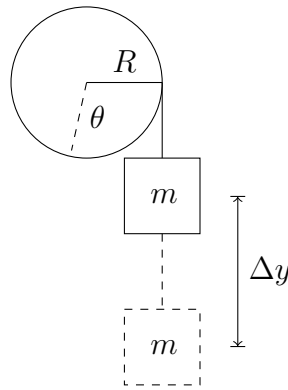


University Physics 1A

Alvin Lin

November 10th, 2017

Torque Experiment



Find a formula for I in terms of α .

$$\begin{aligned}\Delta y = s = R\theta \quad F_{net} = ma \quad \tau_{net} = I\alpha \\ -\frac{I\alpha}{R} - mg = ma = mR\alpha \\ -\frac{I\alpha}{R} - mR\alpha = mg \\ -\frac{I\alpha}{R} = mg + mR\alpha \\ I = -\frac{R}{\alpha}(mg + mR\alpha) \\ = -\frac{mgR}{\alpha} - mR^2 \\ = -Rm\left(\frac{g}{\alpha} + R\right)\end{aligned}$$

$$I = \frac{1}{2}M(R_1^2 + R_2^2)$$

You can find all my notes at <http://omgimanerd.tech/notes>. If you have any questions, comments, or concerns, please contact me at alvin@omgimanerd.tech