useful information:

\[ \tau = r \perp F \]
\[ \tau = I \alpha \]
\[ \tau = \Delta L / \Delta t \]
\[ L = I \omega = r \perp p \]

\[ I = \sum m_i r_i^2 \]
\[ I = \frac{1}{12} ML^2 \]
rod about end
\[ I = \frac{1}{12} ML^2 \]
rod about center
\[ RKE = \frac{1}{2} I \omega^2 \]
\[ \alpha = \Delta \omega / \Delta t \]
\[ \omega = \Delta \theta / \Delta t \]
\[ s = r \theta \]
\[ v = r \omega \]
\[ a = r \alpha \]

\[ \theta = \omega_0 t + \frac{1}{2} \alpha t^2 \]
\[ \omega^2 = \omega_0^2 + 2 \alpha \theta \]

\[ \sum \tau = 0 \; ; \; \sum F = 0 \]

\[ g = 9.8 \, \text{m/s}^2 \]

1 kg weighs 2.2 lb

1 mph = 0.447 m/s

area of a sphere = \(4\pi r^2\)

area of a circle = \(\pi r^2\)

area of a square = \(L^2\)

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