Changing Mass idk

Center of Mass

$$M_{\text{tot}}\vec{R} = \int \vec{r}\,\mathrm{d}m$$

$$\Rightarrow \vec{R} = \frac{1}{M}\int r\rho(\vec{r})\mathrm{d}V$$

where

$$M = \int \rho(\vec{r})\mathrm{d}V$$

Rotation

Momentum

adawdwadaw

Moment of Inertia

$$I = \int \vec{r}_{\perp}^{\,2}\mathrm{d}m$$