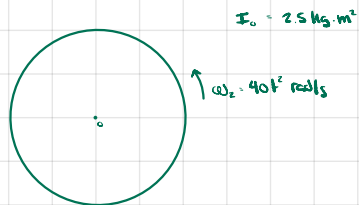


Ex 10.9



The turbine is symmetric about the axis of rotation.

$$\vec{L}_i = \vec{r}_i m_i \vec{v}_i \hat{k} = \vec{r}_i m_i \cdot \vec{r}_i \omega_z \hat{k} = m_i r_i^2 \omega_z \hat{k}$$

$$\sum \vec{L}_i = \hat{k} \omega_z \sum m_i r_i^2 = I_z \omega_z \hat{k}$$

The turbine isn't a slice on the xy -plane.

\vec{L}_i for parts of the turbine not on xy -plane is

$$\vec{L}_i = (r_{i,x} \hat{i} + r_{i,y} \hat{j} + r_{i,z} \hat{k}) \times$$