- Last Lecture
  - Energy and Momentum of rotation
- Today
  - Conclusion of Angular Momentum
- Important Concepts
  - Kinetic energy of rotation adds a new term to the same energy equation, it does not add a new equation.
  - Momentum of rotation gives an additional equation
    - There is the additional complication that the moment of inertia can change.
    - For particles in orbit, angular momentum gives information about the direction as well as the speed

Important Reminders

- Mastering Physics due today at 10pm.
- Final Exam is next Monday: 9am - noon.
- Final Exam Samples posted
- Review & Office hours to be announced via e-mail

Gyroscope vs. Circular Motion

- For linear motion: $\vec{F} = \frac{d\vec{p}}{dt}$ $\Delta\vec{p} = \int \vec{F} dt$
- For angular motion: $\vec{\tau} = \frac{d\vec{L}}{dt}$ $\Delta\vec{L} = \int \vec{\tau} dt$
- For circular motion, the force is always perpendicular to the momentum, the magnitude of velocity never changes, only the direction rotates.
- The same is close to true for a precessing gyroscope.