Physics 151 Reading Assignment for November 2 Section 7.1

7.1 - The Rotation of a Rigid Body

- Rigid body - "big" object that doesn't change shape when rotating.
- Every point on a rotating rigid body has the same angular velocity, ω.
- Angular acceleration, α - the rate at which angular velocity changes.
- Graphs for Rotational Motion - A nice reminder of chapter 2, but we probably won't have time to do this in class.
- Every point on a rotating rigid body has two linear accelerations - the centripetal and tangential accelerations.
- Centripetal acceleration - we've studied already. Points toward the center. $a_c = \dfrac{v^2}{r} = \omega^2 r$. Due to changes in direction.
- Tangential acceleration - in the same direction as the linear velocity, $\vec{\mathbf{v}}$ (and so at 90° to $\vec{\mathbf{a}}_c$). Due to changes in speed. $a_t = \alpha r$.