**Angular Momentum**

Momentum:

p = mv

**L = Iω**

Example: What is the angular momentum of a 23 cm radius 5.43 kg grinding wheel at 1500 RPMs?

Force, time, I and ω

Ft = mΔv

**Γt = IΔω**

Example: A merry go round that is a 340. kg cylinder with a radius of 2.20 m. If a torque of 94.0 mN acts for 15.0 s, what is the change in angular velocity of the merry go round?

Example: A figure skater spinning at 3.20 rad/s pulls in their arms so that their moment of inertia goes from 5.80 kgm2 to 3.40 kgm2. What is their new rate of spin? What were their initial and final kinetic energies? (Where does the energy come from?)

Example: A merry go round is a 210 kg 2.56 m radius uniform cylinder. Three 60.0 kg children are initially at the edge, and the MGR is initially moving at 23.0 RPM. What is the resulting angular velocity if they move to within 0.50 m of the center?