INTRO TO ANGULAR MOMENTUM

● Remember**:** If you have linear speed **(_____),** you have ***Linear*** Momentum → **p = m v** **[kg * m / s]**

- If you have rotational speed **(_____),** you have ***Angular*** Momentum → **L = _____** **[kg * m² / s]**

- Difference**:** ***Linear*** Momentum is *absolute*; ***Angular*** Momentum is *relative* to the Axis of Rotation **–** like Torque**!**

- Do NOT confuse Angular Momentum **(L = Iw)** with Moment of Inertia **(I;** angular equivalent of *mass***).**

EXAMPLE**:** A solid cylinder of mass M = 5 kg and radius R = 2 m rotates about a perpendicular axis through its center with 120 RPM. Calculate its angular momentum about its central axis**.**

PRACTICE: ANGULAR MOMENTUM / FIND MASS

PRACTICE**:** When solid sphere 4 m in diameter spins around its central axis at 120 RPM, it has 1,000 kg m^2 / s in angular momentum**.** Calculate the sphere's mass**.**

PRACTICE: ANGULAR MOMENTUM / COMPOSITE DISC

PRACTICE**:** A composite disc is built from a solid disc and a concentric, thick-walled hoop, as shown below. The inner disc has mass 4 kg and radius 2 m. The outer disc (thick-walled) has mass 5 kg, inner radius 2 m, and outer radius 3 m. The two discs spin together and complete one revolution every 3 s. Calculate the system's angular momentum about its central axis**.**