

7. The moment of inertia of a point mass is the product of the mass times the square of the distance from the pivot point.

$$I = m r^2$$

$$I = (2.0 \text{ kg}) (0.3 \text{ m})^2$$

$$I = (2.0 \text{ kg}) (0.09 \text{ m}^2) = 0.18 \text{ kg m}^2$$

The angular momentum is defined as the product of the moment of inertia times the angular velocity.

$$L = I \omega$$

$$L = (0.18 \text{ kg m}^2) (8.0 \text{ rad / s}) = 1.44 \text{ kg m}^2 / \text{s}$$