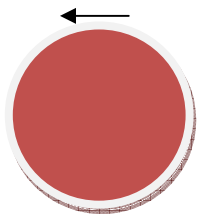


## Reading Assignment: Rotations

1) A ball spins around at 10 rotations per second. What is its angular velocity  $\omega$ ?

2) A propeller's angular position (orientation around its axis) depends on time like  $\theta(t) = (10 \text{ s}^{-2}) t^2$ . What is the propeller's angular velocity and angular acceleration at  $t=1\text{s}$ ?

3) An object is rotating as shown, but slowing down. If  $\theta$  increases in the clockwise direction, is the angular velocity positive or negative? Is the angular acceleration positive or negative?



4) A solid sphere of mass 1kg and radius 10cm is rotating with an angular speed of  $\omega = 4 \text{ s}^{-1}$ . What is its kinetic energy?