

1. Many computer disk drives spin at 7200 rpm (revolutions per minute). What is the angular velocity in degrees per second.
2. Your friend spins you around in an office chair and as you are spinning, you see him directly in front of you every 2.5 seconds. What is your angular velocity in degrees per second?
3. A physics student ties a ball to a 1.5 m string and spins it in a horizontal circle above her head. Her lab partner finds that eight complete cycles takes 26.3 s. What is the angular velocity of the ball in degrees per second? What is the linear velocity of the ball in m/s? Hint: The ball travels a distance of one circumference in a time of one period.
4. A satellite orbiting Earth at an altitude of 800 km has an orbital period of 100 minutes. What is the satellite's angular velocity in degrees per second? What is the linear velocity of the satellite in km/h? Earth's radius is 6400 km.
0.06 deg/day; 27,200 km/h or 7.56 km/s
5. Mercury completes one orbit of the Sun in 88 days. What is the planet's angular velocity in degrees per *day* and degrees per minute?
4.1 deg/day; 0.003 deg/min
6. The front wheel of a small tricycle has a circumference of 2 m. For a child riding the tricycle at a speed of 5 km/h, what is the angular velocity of the wheel in degrees per second. Does a smaller rear wheel have the same angular velocity?
250 deg/s