Help Session 5-(Fuad Enaya) 8/12/2004

CH # 12

Q1. **A uniform wheel of radius 0.5 m rolls without slipping on a horizontal surface. Starting from rest, the wheel moves with constant angular acceleration 6.0 rad/s^2. Find The distance traveled by the center of mass of the wheel from t = 0 to t = 3 s.**
(Correct Ans. 13.5 m)

Q2. **A 2.0 kg stone is tied to a 0.50 m string and swung around a circle at a constant angular velocity of 12 rad/s. Find The magnitude of the net torque on the stone about the center of the circle.**
(Correct Ans.0 N*m)

Q3. **A stone in the form of a uniform circular disk of radius 0.20 m and mass 14 kg can rotate about its axis. Starting from rest, it reaches an angular velocity of 44 rad/s in 10 s under the action of a constant torque. What is the instantaneous power at the end of this time interval?**
(Correct Ans 54 W)

Q4. **A disk (rotational inertia = 2*I) rotates with angular velocity Wo about a vertical, frictionless axle. A second disk (rotational inertia = I) and initially not rotating, drops onto the first disk (see Fig). The two disks stick together and rotate with an angular velocity W. Find W.**
(Correct Ans (2/3)*Wo)