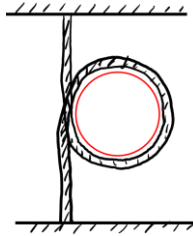
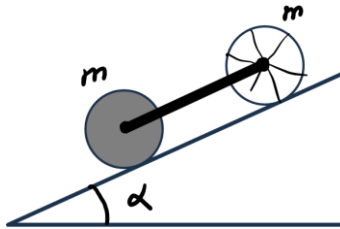


Homework 25.

1. A uniform heavy rope, whose ends are fixed on the same vertical line, is looped around a massless hoop. With what acceleration will the hoop fall if it is released? (Here “heavy rope” means the rope’s own weight is taken into account.)



2. The axes of a thin-walled cylinder and a solid cylinder are connected by a massless rod. The cylinders roll down an inclined plane without slipping, where the angle of inclination is α . The radii of the cylinders are the same, and the mass of each cylinder is m . Determine the tension force in the rod.



3. A monkey of mass m is balanced by a counterweight on pulley A. Pulley A itself is balanced by a load of mass $2m$ on pulley B. The system is initially at rest. How will the load move if the monkey begins to pull in the rope at a constant speed u relative to itself? Neglect the masses of the pulleys and friction.

