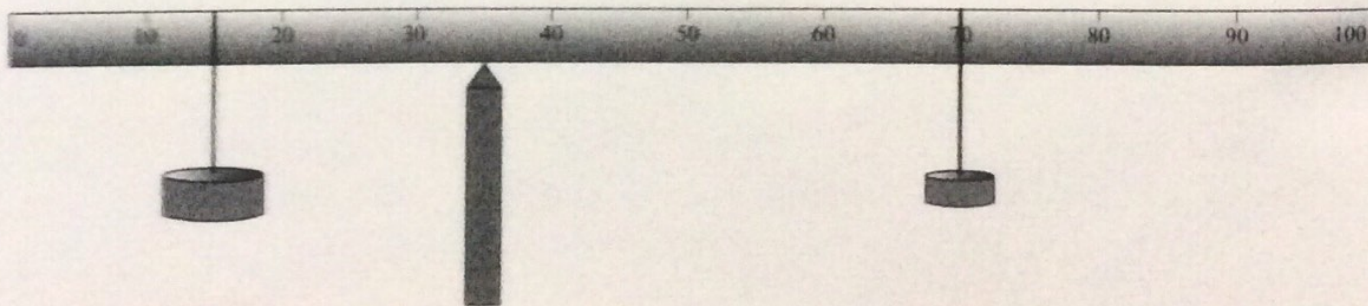


- A string is attached to a nearly frictionless wheel, and a 20 N force is applied at a 60° angle to the tangent, as shown above. The diameter of the wheel is 1.0 meter. What is the torque exerted on the wheel by the string?

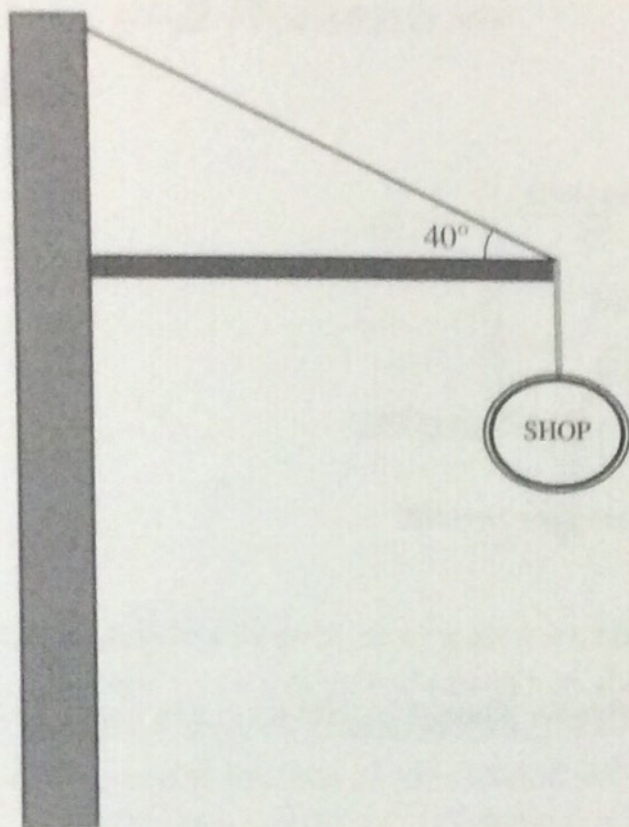
 - $5\text{ N}\cdot\text{m}$
 - $8.7\text{ N}\cdot\text{m}$
 - $10\text{ N}\cdot\text{m}$
 - $20\text{ N}\cdot\text{m}$
 - $40\text{ N}\cdot\text{m}$
- A basketball with a mass of 0.60 kg and radius of 7 cm is rolling across a level floor at a constant speed of 2.0 m/s .

 - Determine the ball's angular velocity.
 - What is the ball's angular acceleration?
 - How many turns will the ball make in 2 seconds?
- A bicycle wheel with a radius of 0.5 meter and mass of 3.0 kg is turning at 20 rpm when the rider applies the brakes. The wheel turns 10 more times before the bicycle comes to a stop.

 - What is the wheel's angular acceleration?
 - How far has the wheel traveled across the surface?



4. The uniform meterstick above has an object with mass 800 grams hanging at the 15 cm mark and an object with mass 350 grams at the 70 cm mark. It balances horizontally on a pivot placed at the 35 cm mark. What is the mass of the meterstick?



5. A uniform wooden beam with a mass of 20 kg extends horizontally from a wall, as shown above. A support cable (of negligible mass) extends from the far end of the beam to the wall, forming a 40° angle with the beam. The beam has a sign with a mass of 5 kg hanging from the end of it.
- Find the tension in the cable that helps to support the beam and sign.
 - Find the horizontal and vertical components of the force the wall exerts on the wooden beam.