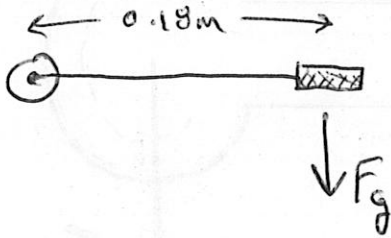
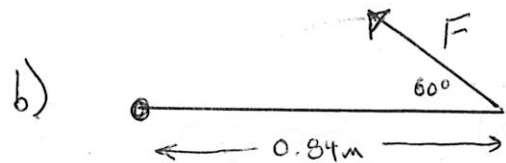
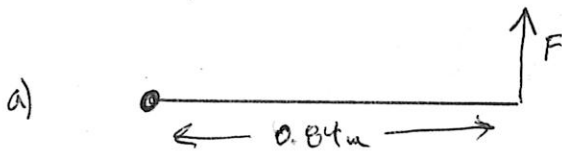


Torque

1. What is the maximum torque exerted by a 60 kg person riding a bike if the person puts all her weight on each pedal when climbing a hill. The pedals rotate in a circle of radius 18 cm



2. A person exerts a force of 28 N on the end of a door 84 cm wide. What is the magnitude of the torque if the force is exerted; a) perpendicular to the door and , b) at 60 degrees to the face of the door.



3. The bolts on the cylinder head of certain engines require tightening to a torque of 90 N.m. If a wrench is 20 cm long; a) what force perpendicular to the wrench must the mechanic exert at its end? B) if the six sided bolt head is 15 mm in diameter, estimate the force applied near each of the six points by a socket wrench.

