

Homework Problem H19.B

Given: The bandbrake system shown below has a band wrapped around a drum, with a counter-clockwise torque M being applied to the drum and the drum rotating at a constant rate. The band is tensioned by arm AC, with the load P acting at end C of the arm. The coefficient of kinetic friction between the band and the drum is μ_K . Consider the weight of arm AC to be negligible compared to P .

Find: Determine the couple M acting on the drum. Write your answer in terms of P , R and μ_K .

