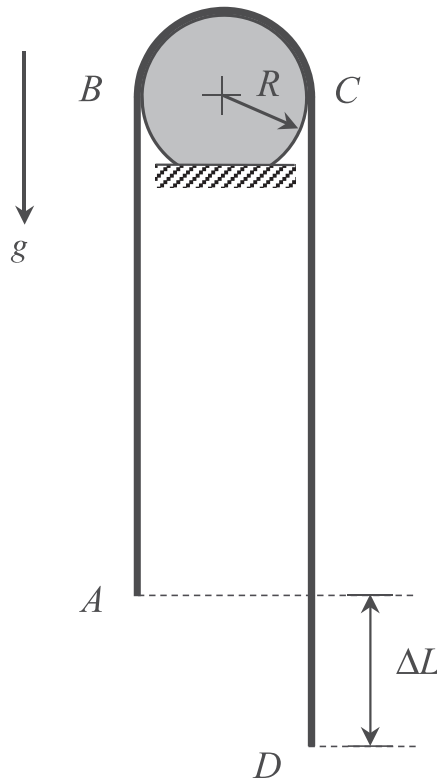


Homework H19.A

Given: Cable AD has a length of L and has a weight per length of v . The cable is draped over a rough, fixed cylinder having a radius of R , where μ_s is the static coefficient of friction between the cable and the drum. When the cable is at rest, the difference in height between ends A and D is ΔL . Note that for smooth contact between the drum and the cable ($\mu_s = 0$), $\Delta L = 0$ for equilibrium. For $\mu_s \neq 0$, the cable can remain in equilibrium for a range of values for ΔL .

Find: Assuming that $R \ll L$ such that the weight of the cable section BC is small compared to the rest of the cable, determine the range of values for ΔL for the cable to remain at rest. Give your answer in terms of the cable length L .

For this problem, use the following parameter: $\mu_s = 0.6$.



Homework H19.B

Given: Block C, having a weight of W , is supported by cable CD that is pulled over a pair of rough, fixed cylinders, where μ_s is the coefficient of static friction between the cable and cylinders. Note that section AB is horizontal.

Find: Determine the range of values for the force F applied to end D of the cable for which block C remains in static equilibrium. Provide your answer in terms of the block's weight W .

For this problem, use the following parameter: $\mu_s = 0.6$.

