# Lecture 9: Exercises

(1) The vertical position of the 100kg block is adjusted by the screw-activated wedge. Compute the moment M which must be applied to the screw handle in order to raise the block. The screw has a mean diameter of 30mm and advances 10mm for each complete revolution. The coefficient of friction for the screw threads is 0.25, and the coefficient of friction between the wedge and the block is 0.40.
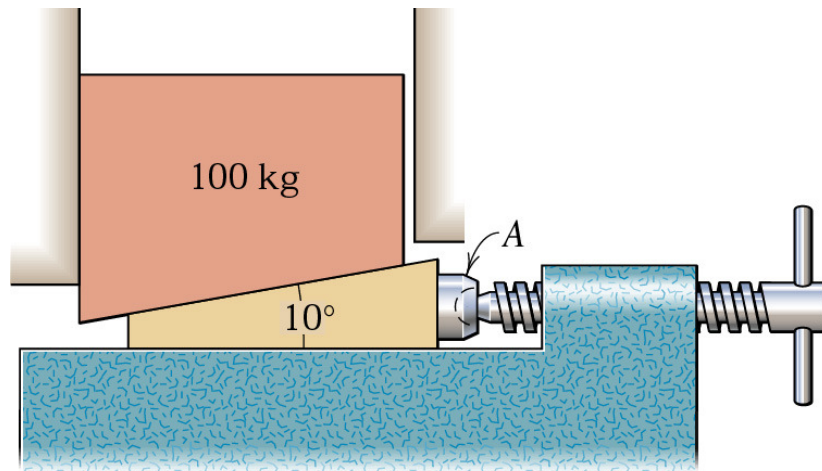
(2) Compute the horizontal force P required to raise the 100kg load. The coefficient of friction between the rope and the fixed bars is 0.40.
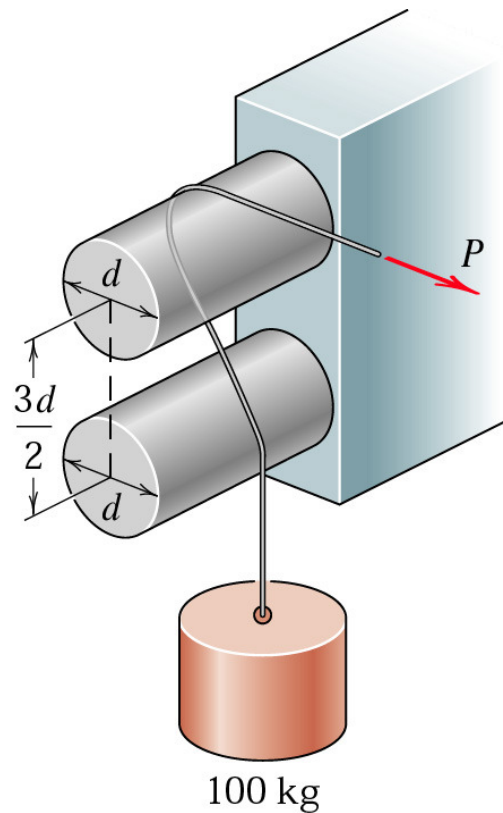
(3) The 8kg block is resting on a 20° inclined plane with a coefficient of static friction $\mu_s = 0.50$. Determine the minimum horizontal force P which will cause the block to slip.
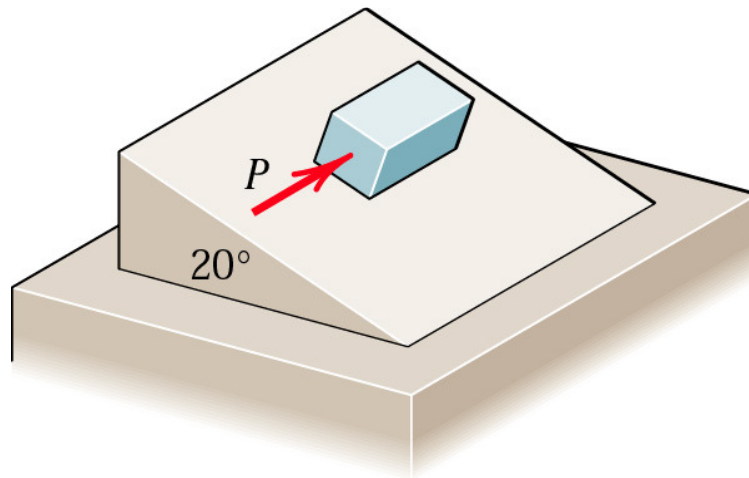
(4) Determine the range of mass m for which the system is in equilibrium