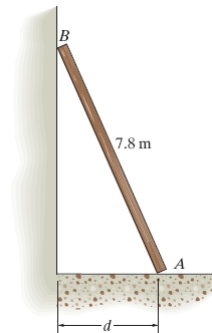


Exercise

*8-8. The uniform pole has a weight of 150 N and a length of 7.8 m. Determine the maximum distance d it can be placed from the smooth wall and not slip. The coefficient of static friction between the floor and the pole is $\mu_s = 0.3$.

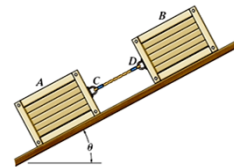
$$d = 4.013 \text{ m} \quad \text{Ans}$$



*8-21. Crates A and B weigh 1000 N and 750 N, respectively. They are connected together with a cable and placed on the inclined plane. If the angle θ is gradually increased, determine θ when the crates begin to slide. The coefficients of static friction between the crates and the plane are $\mu_A = 0.25$ and $\mu_B = 0.35$.

$$\theta = 16.3^\circ \quad \text{Ans.}$$

$$F_{CD} = 41.13 \text{ N}$$

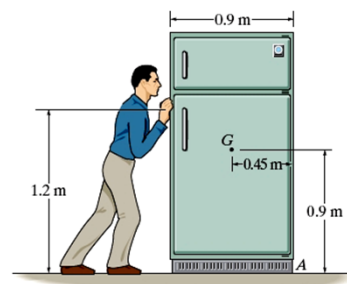


1

Exercise

8-26. The refrigerator has a weight of 900 N (≈ 90 kg) and rests on a tile floor for which $\mu_s = 0.25$. If the man pushes horizontally on the refrigerator in the direction shown, determine the smallest magnitude of horizontal force needed to move it. Also, if the man has a weight of 750 N (≈ 75 kg), determine the smallest coefficient of friction between his shoes and the floor so that he does not slip.

$$\mu_s' = 0.300 \quad \text{Ans.}$$



8-147. If block A has a mass of 1.5 kg, determine the largest mass of block B without causing motion of the system. The coefficient of static friction between the blocks and inclined planes is $\mu_s = 0.2$.

$$m_B = 1.66 \text{ kg} \quad \text{Ans}$$

