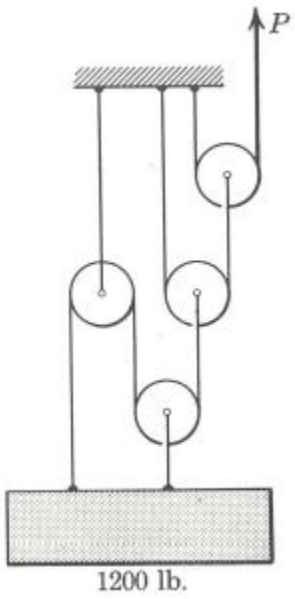
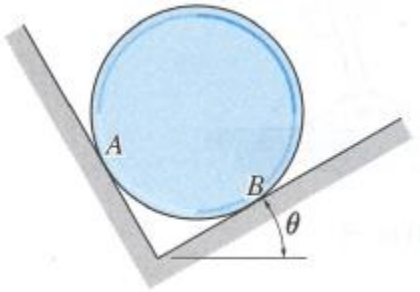
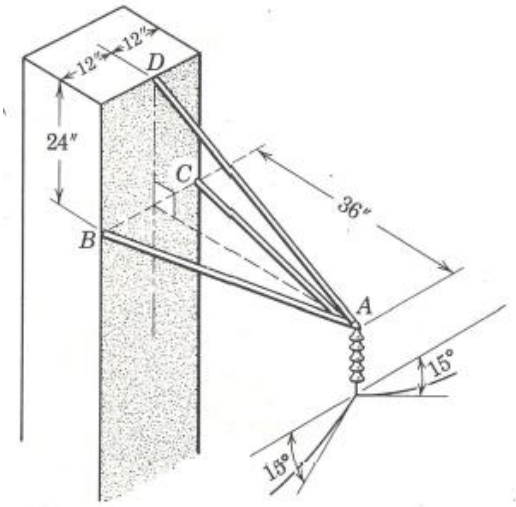
1. What force is required to support the 1200-lb platform shown?



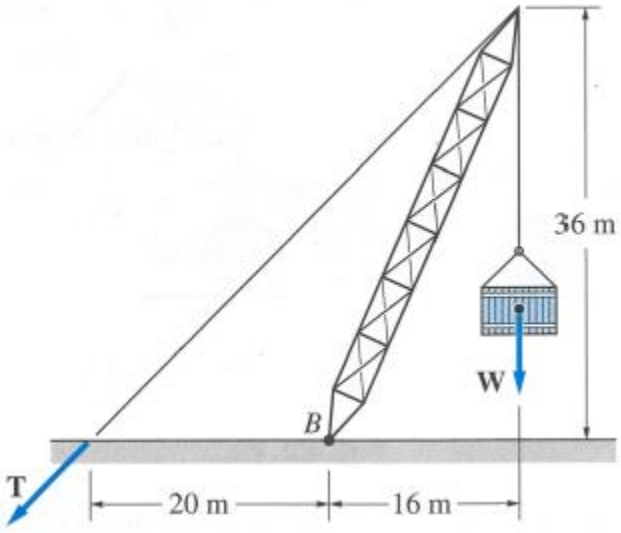
2. The homogeneous cylinder of weight W=100 lb rests in a frictionless right-angled corner as shown. Determine the contact forces N_A and N_B as functions of θ (assuming $0 \leq \theta \leq 90°$). Then, compute the values of N_A and N_B for $\theta = 0º$, 15º, 30º, and 45º.



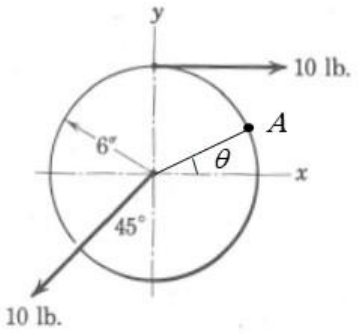
3. A high-voltage power line is suspended from a transmission tower by the projecting framework shown. If the tension in the power line is 600 lb at the insulator, determine the force in the legs *AB, AC* and *AD*.



4. Given that $T = 28.3$ kN and $W = 25$ kN, determine the magnitude and sense of the moments about point B of the following: (*a*) the force **T**; (*b*) the force **W**; and (*c*) forces **T** and **W** combined.



5. A wheel is subjected to two forces as shown in the figure. Determine the moment created by the combination of the two forces about point A on the rim of the wheel as a function of θ. Determine the value and location of the largest absolute magnitude of the combined moment.



6. Calculate the moment of the force P about the axis AD.