1. The weight $W$ in the figure shown is 1400 N. How much force $P$ does the woman have to exert on the rope to maintain the weight in the position shown? Free-Body diagrams required.
2. A 60-lb vertical force \( P \) is applied at \( A \) to the bracket shown, which is held by screws at \( B \) and \( C \). (a) Replace \( P \) by an equivalent force-couple system at \( B \). (b) Find the two horizontal forces at \( B \) and \( C \) which are equivalent to the couple obtained in part (a).
3. The truss is subjected to the three forces and one couple shown.
(90 kN, 90 kN, W = 200 kN, and M = 2000 kN·m)
Determine:  
   a) the resultant force acting on the truss, and 
   b) the point of intersection of its line of action with line AB.
4. In trying to move across a slippery icy surface, a 175-lb man uses two ropes AB and AC. Knowing that the force exerted on the man by the icy surface is perpendicular to the surface, determine the tension in each rope. Assume all forces on the man act at point A. Free-Body diagram required.
5. For the wedge shown,
   a) Replace the 4 forces shown with an equivalent single couple.
   b) Would the block translate along any coordinate axes? If yes, which ones?
   c) Would the block rotate about any coordinate axes? If yes, which ones?