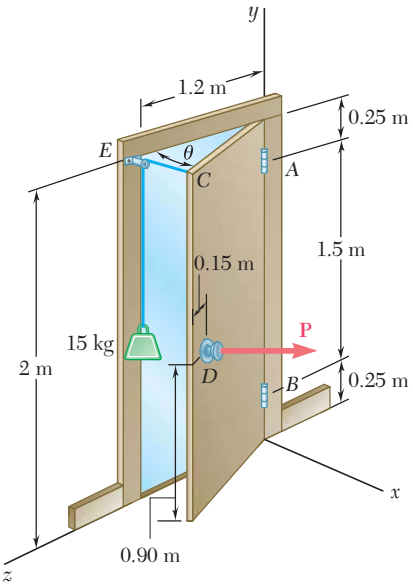

Fig. P4.70

4.69 A 10-kg storm window measuring 900 × 1500 mm is held by hinges at *A* and *B*. In the position shown, it is held away from the side of the house by a 600-mm stick *CD*. Assuming that the hinge at *A* does not exert any axial thrust, determine the magnitude of the force exerted by the stick and the components of the reactions *A* and *B*.

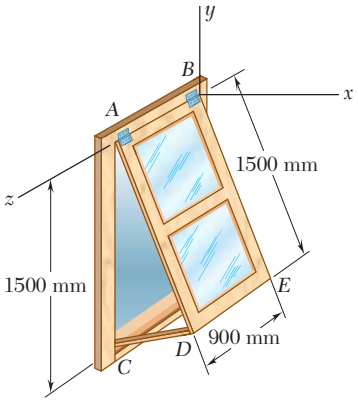

Fig. *P4.69*

4.70 A 20-kg door is made self-closing by hanging a 15-kg counterweight from a cable attached at *C*. The door is held open by a force **P** applied at the knob *D* in a direction perpendicular to the door. Determine the magnitude of **P** and the components of the reactions *A* and *B* when $\theta = 90°$. It is assumed that the hinge at *A* does not exert any axial thrust.

4.71 Solve Prob. 4.65 assuming that the hinge at *A* has been removed and that the hinge at *B* can exert couples about the axes parallel to the *x* and *y* axes, respectively.

4.72 Solve Prob. 4.69 assuming that the hinge at *A* has been removed.

4.73 The rigid L-shaped member *ABC* is supported by a ball and socket at *A* and three cables. Determine the tension in each cable and the reaction at *A* caused by the 500-lb load applied at *G*.

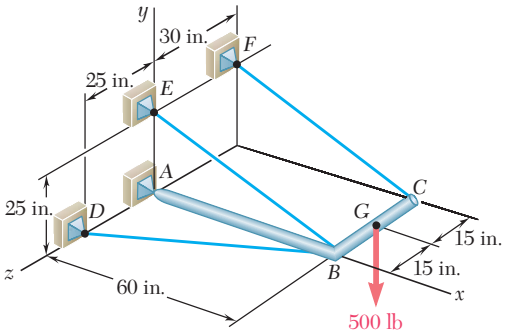

Fig. P4.73

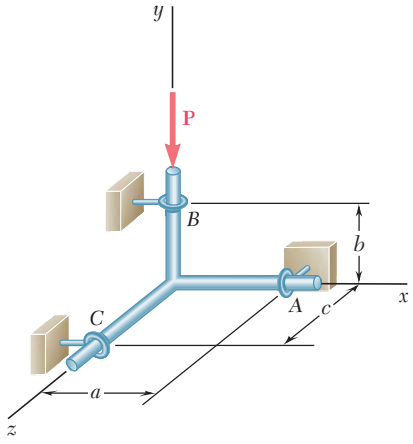

Fig. P4.74

4.74 Three rods are welded together to form the "corner" shown. The corner is supported by three smooth eyebolts. Determine the reactions at *A*, *B*, and *C* when *P* = 1.2 kN, *a* = 300 mm, *b* = 200 mm, and *c* = 250 mm.