

Homework # 2

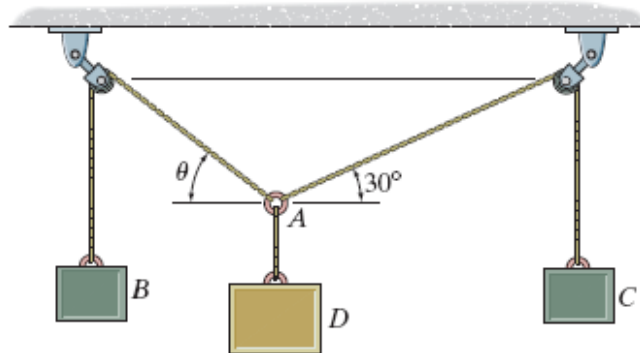
Topics Equilibrium of a Particle (Chapter 3 in textbook).

Textbook: Engineering Mechanics, by R.C. Hibbeler, Pearson, 12th Edition.

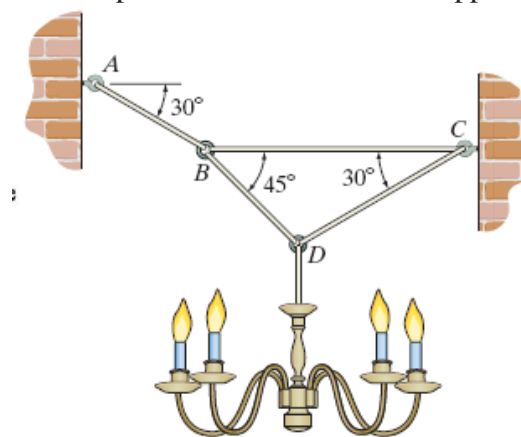
Problems: *Use the concept of equilibrium of coplanar and three-dimensional force systems to solve:*
 Problems: 3-12 (page 96), 3-20 (page 97), 3-24 (page 98), 3-40 (page 100), 3-56 (page 110), 3-60 (page 111).

Due: Tuesday, October 16, 2014

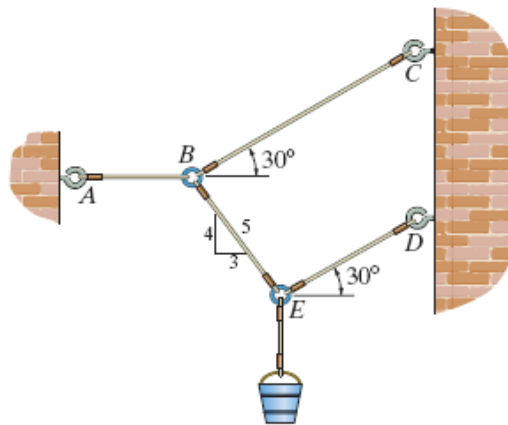
3–12. If block *B* weighs 1 kN and block *C* weighs 0.5 kN, determine the required weight of block *D* and the angle for equilibrium.



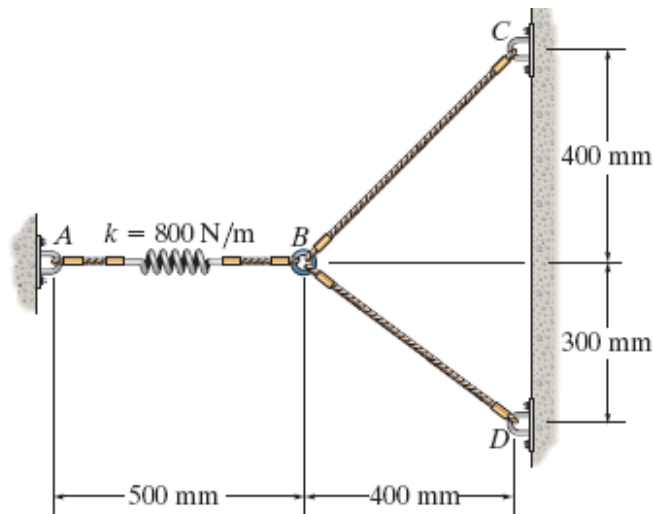
3–20. Determine the tension developed in each wire used to support the 50-kg chandelier.



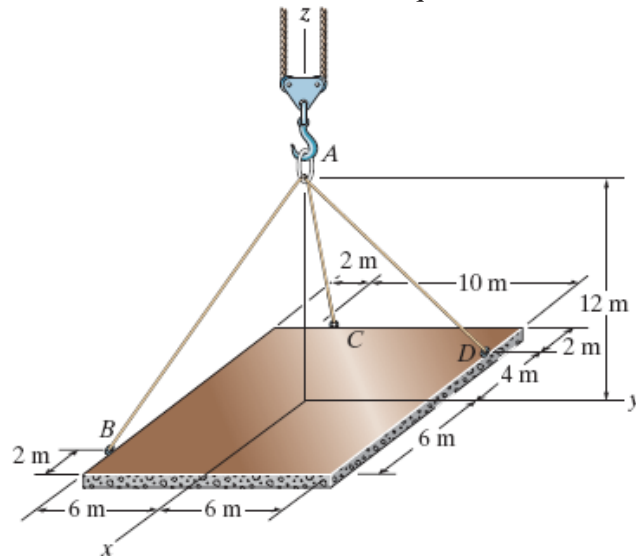
*3–24. If the bucket weighs 0.25 kN, determine the tension developed in each of the wires.



3–40. The spring has a stiffness of $k = 800 \text{ N/m}$ and an unstretched length of 200 mm. Determine the force in cables BC and BD when the spring is held in the position shown.



3–56. The ends of the three cables are attached to a ring at *A* and to the edge of a uniform 150-kg plate. Determine the tension in each of the cables for equilibrium.



3–60. The 50-kg pot is supported from *A* by the three cables. Determine the force acting in each cable for equilibrium. Take $d = 2.5$ m.

