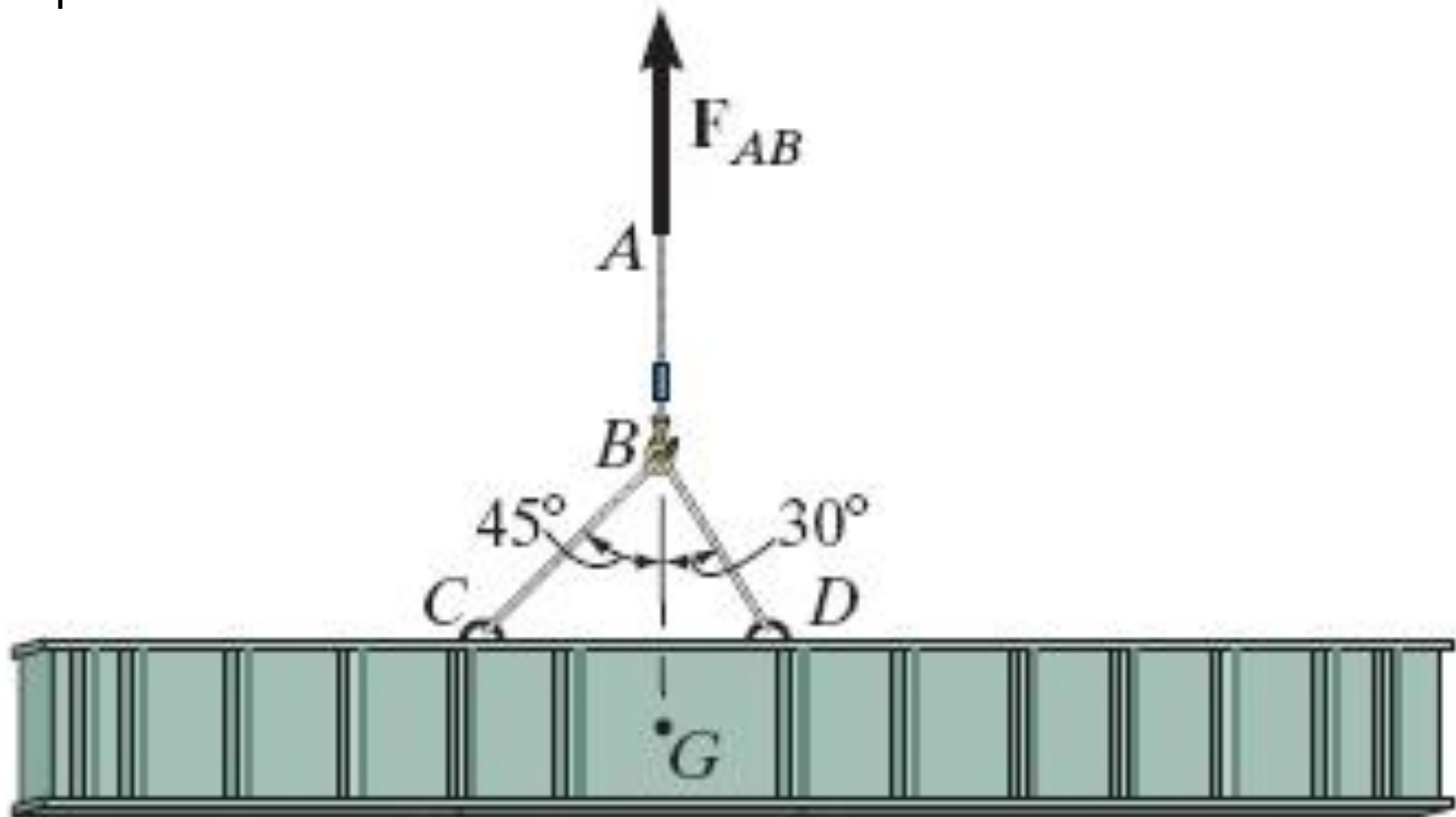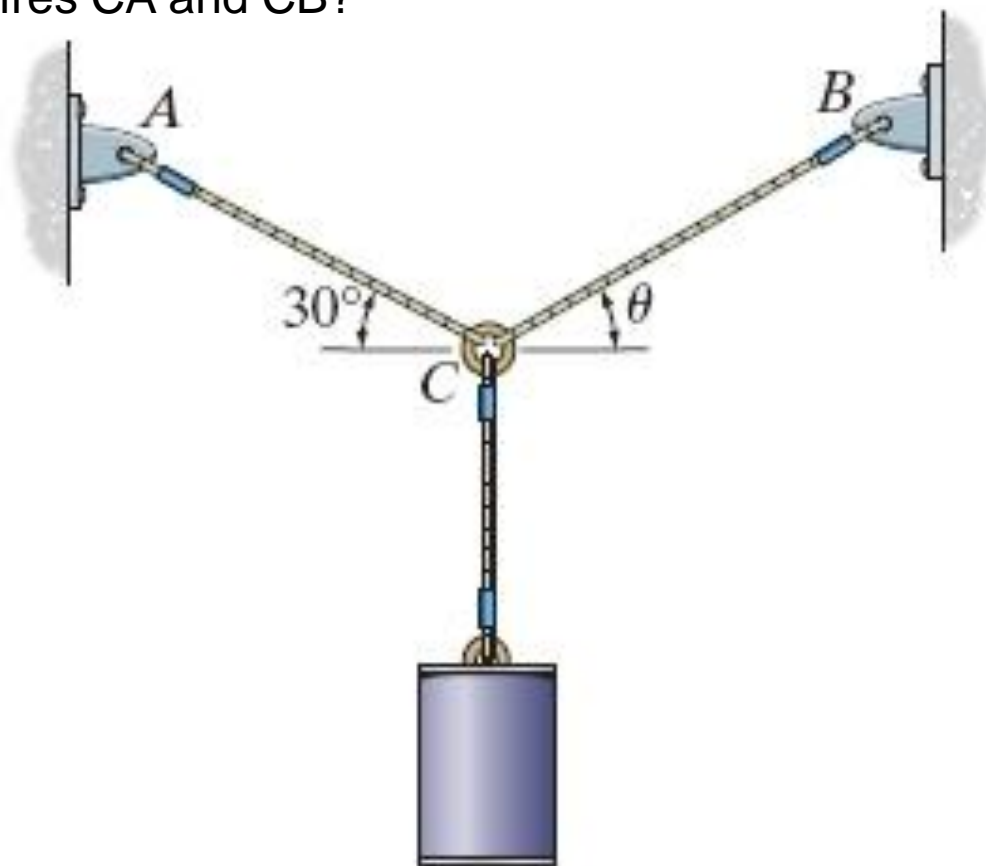3-3. If the mass of the girder is 3 Mg and its center of mass is located at point G, determine the tension developed in the cables AB, BC, and BD for equilibrium.

3-17. If cable CB is subjected to a tension that is twice that of cable CA, determine the angle θ for equilibrium of the 10 kg cylinder. Also what are tensions in wires CA and CB?

3-22. A vertical force P = 50 N is applied to the ends of the 0.6 m cord AB and spring AC. If the spring has an unstretched length of 0.6 m, determine the angle θ for equilibrium. Take k = 250 N/m.
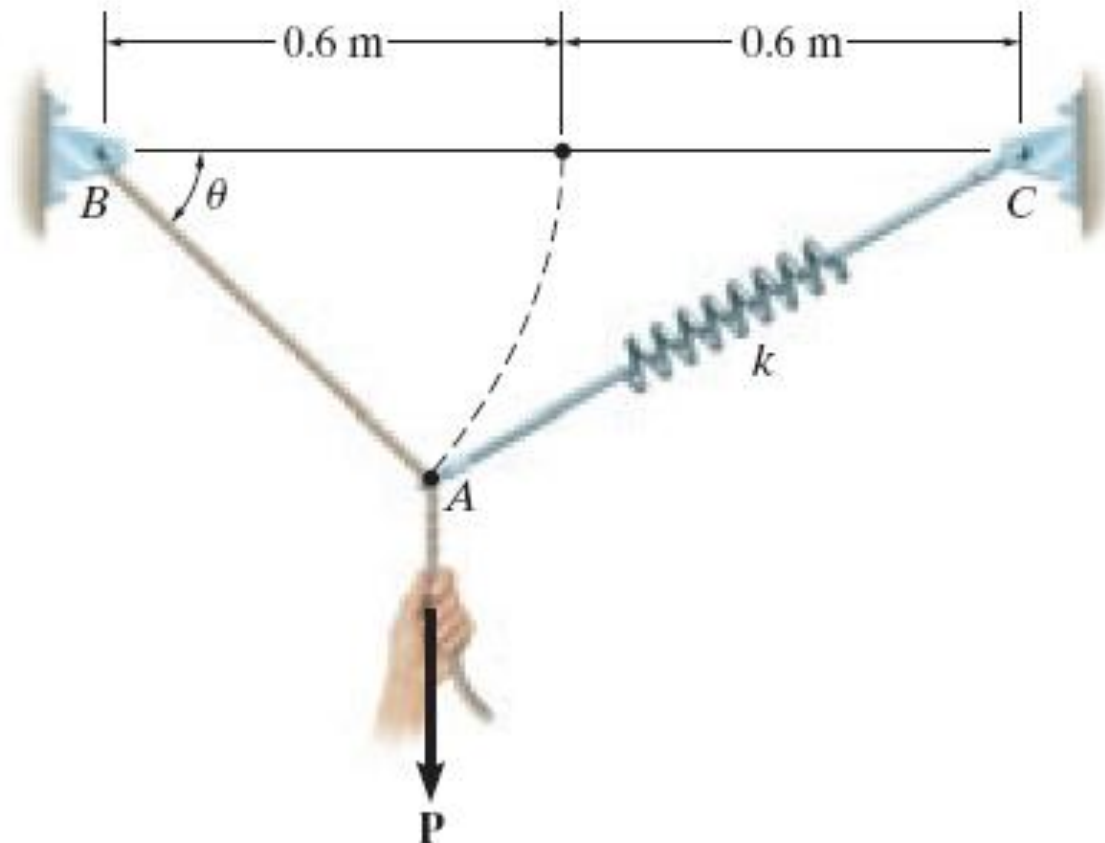
3-32. Determine the magnitude and direction, θ, of the equilibrium force $\mathbf{F}_{AB}$ exerted along link AB by the tractive apparatus shown. The suspended mass is 10 kg. Neglect the size of the pulley at A.
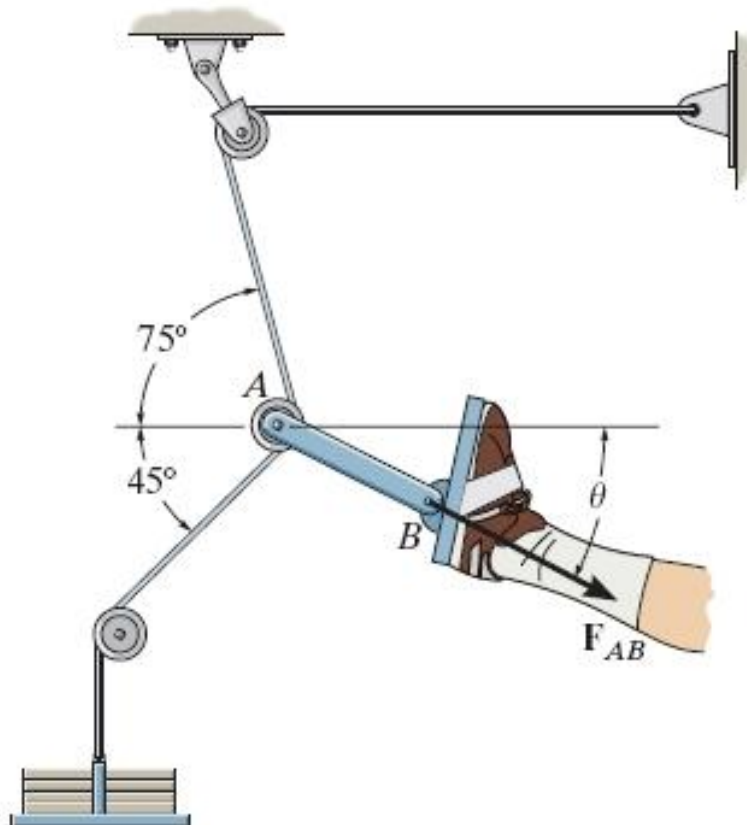
3-44. A scale is constructed using the 10 kg mass, the 2 kg pan, P, and the pulley and cord arrangement. The cord is 2 m long. If s = 0.75 m, determine the mass D in the pan. Neglect size of the pulley.
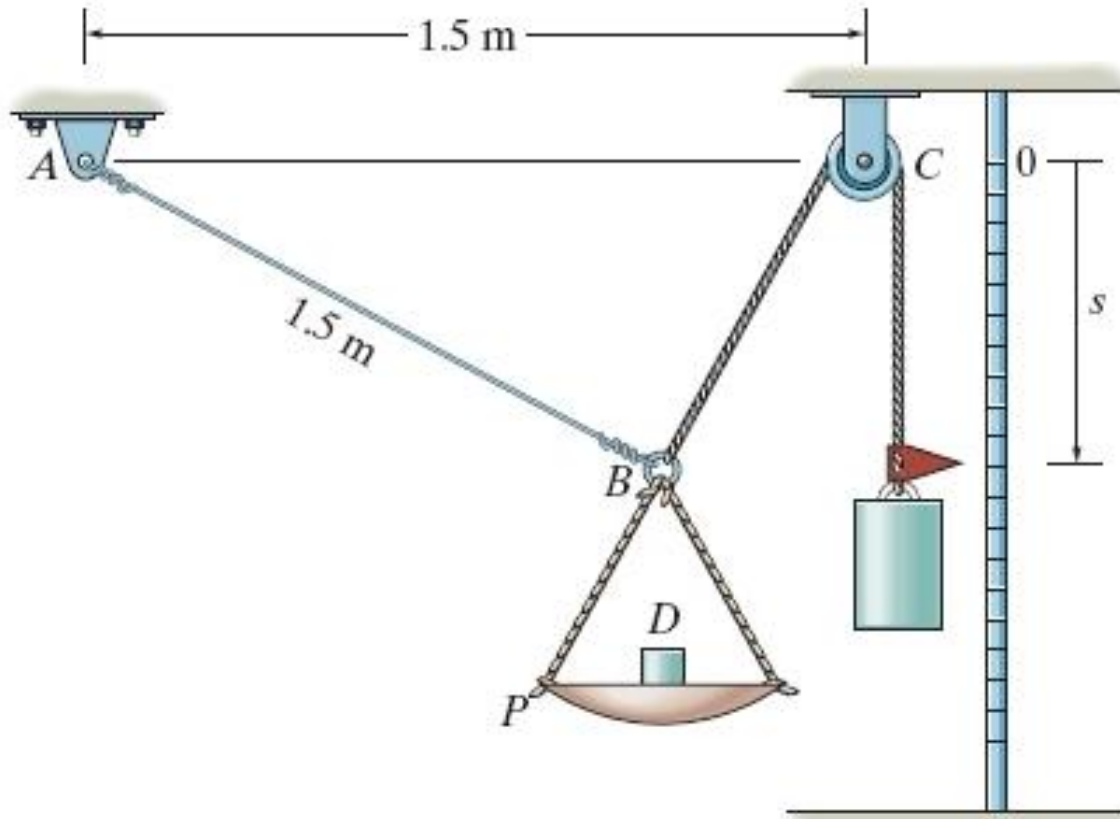
3-50. Determine the force in each cable needed to support the 17.5 kN platform. Set d = 0.

z

1750 kg

A

3 m

D 0.6 m

B

1.2 m

0.9 m

C

0.9 m

d 1.2 m

x *y*
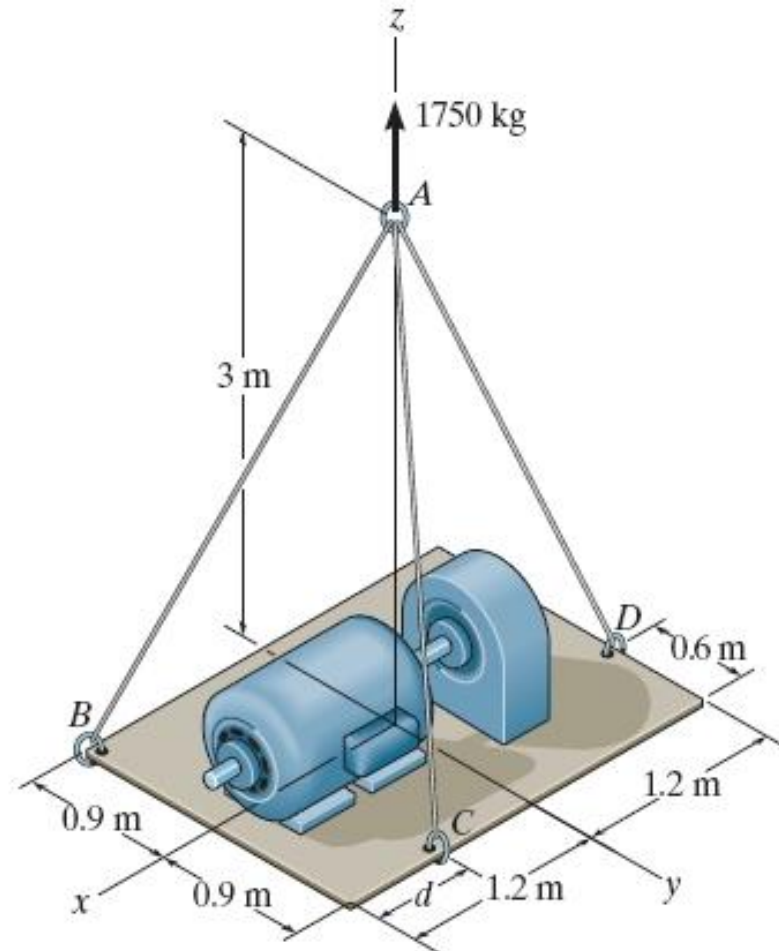
3-53. Determine the Force acting along the axis of each of the three struts needed to support the 500 kg block.