

NOTE: Only problems 2.46 and 2.114 will be marked.

Problem 1 (Problem 2.46)

Two cables are tied together at C and are loaded as shown. Determine the tension:

- (a) in cable AC ,
- (b) in cable BC .

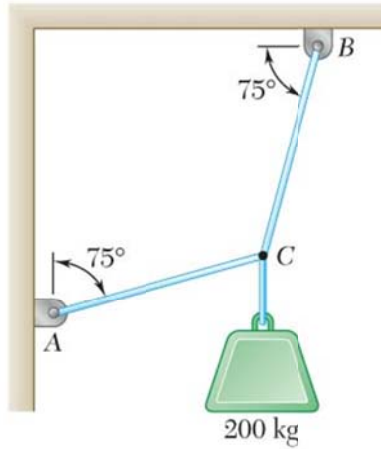


Fig. 1

Problem 2 (Problem 2.63)

Collar A is connected as shown to a 200-N load and can slide on a frictionless horizontal rod. Determine the magnitude of the force \mathbf{P} required to maintain the equilibrium of the collar when:

- (a) $x = 90 \text{ mm}$,
- (b) $x = 300 \text{ mm}$.

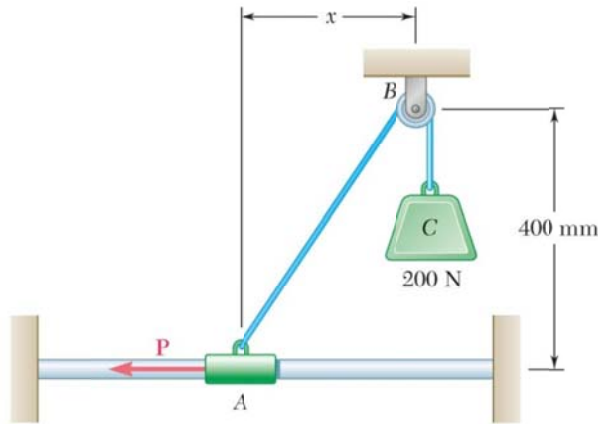


Fig. 2

Problem 3 (Problem 2.93)

Knowing that the tension is 425 N in cable AB and 510 N in cable AC , determine the magnitude and direction of the resultant of the forces exerted at A by the two cables.

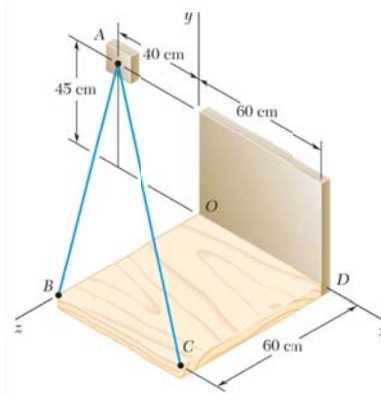


Fig. 3

Problem 4 (Problem 2.109)

A transmission tower is held by three guy wires attached to a pin at A and anchored by bolts at B , C , and D . If the tension in wire AB is 2.52 kN, determine the vertical force \mathbf{P} exerted by the tower on the pin at A .

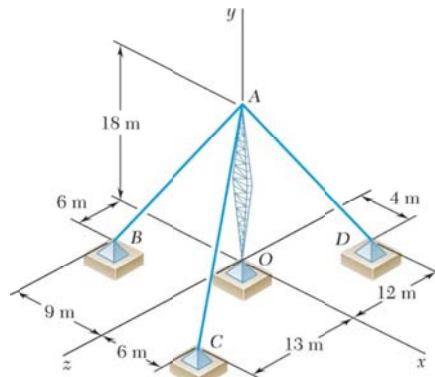


Fig. 4

Problem 5 (Problem 2.114)

A horizontal circular plate weighing 60 N is suspended as shown from three wires that are attached to a support at D and from 30° angles with the vertical. Determine the tension in each wire.

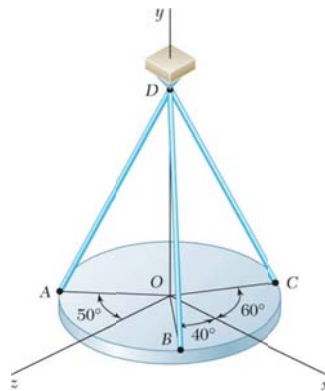


Fig. 5