Statics Handout #2:

Homework #2 Assignment: 2.72, 74, 88, 94, 110

2.71 Determine (*a*) the x, y, and z components of the 600-N force, (*b*) the angles θ_x, θ_y, and θ_z that the force forms with the coordinate axes.

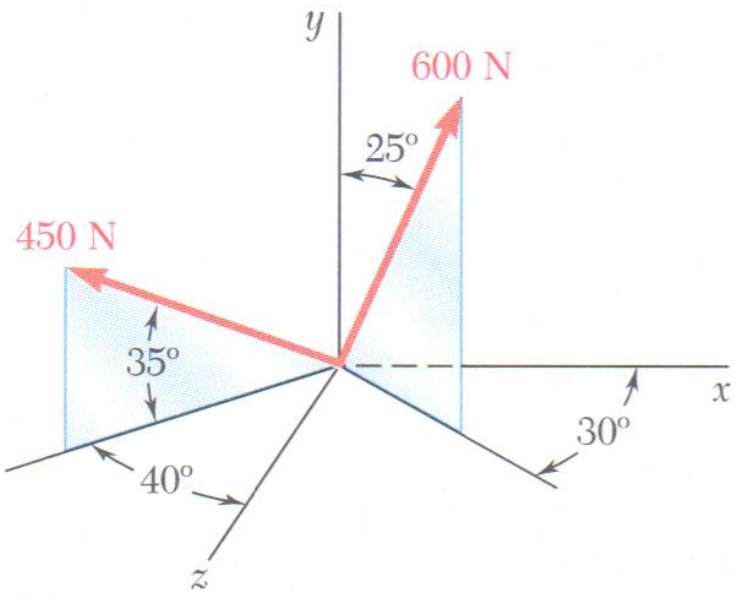


Fig. P2.71 and P2.72

2.72 Determine (*a*) the x, y, and z components of the 450-N force, (*b*) the angles θ_x, θ_y, and θ_z that the force forms with the coordinate axes.

2.73 The end of the coaxial cable AE is attached to the pole AB, which is strengthened by the guy wires AC and AD. Knowing that the tension in wire AC is 120 lb, determine (a) the components of the force exerted by this wire on the pole, (b) the angles θ_x, θ_y, and θ_z that the force forms with the coordinate axes.

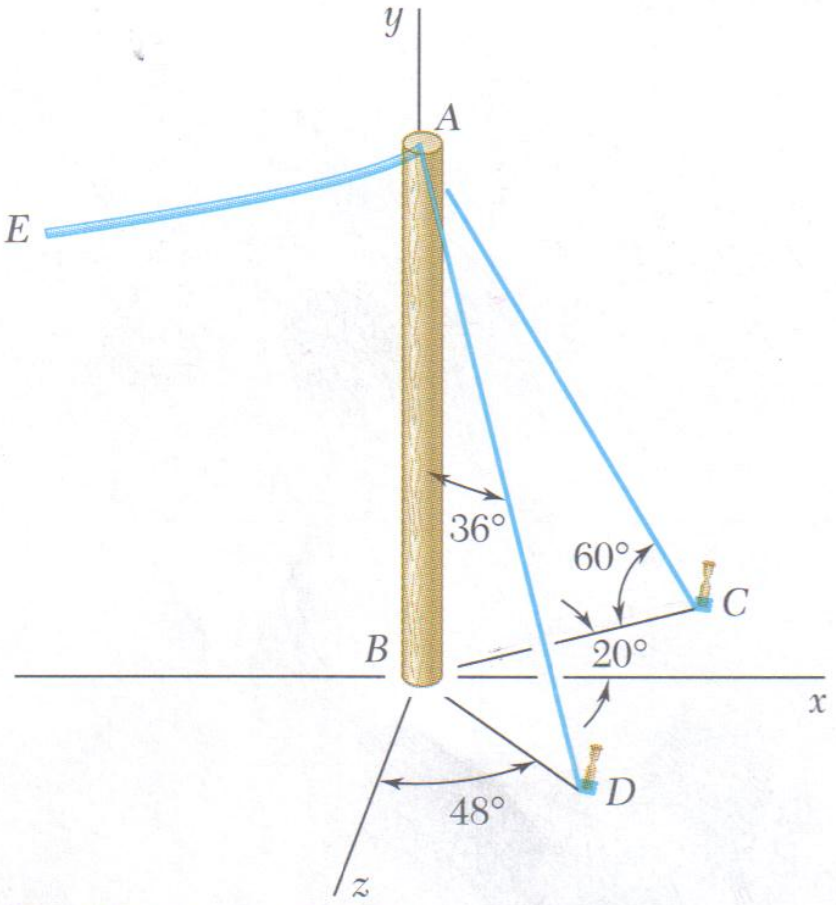


Fig. P2.73 and P2.74

2.74 The end of the coaxial cable AE is attached to the pole AB, which is strengthened by the guy wires AC and AD. Knowing that the tension in wire AD is 85 lb, determine (a) the components of the force exerted by the wire on the pole, (b) the angles θ_x, θ_y, and θ_z that the force forms with the coordinate axes.

2.87 A transmission tower is held by three guy wires anchored by bolts at B, C, and D. If the tension in wire AB is 525 lb, determine the components of the force exerted by the wire on the bolt at B.

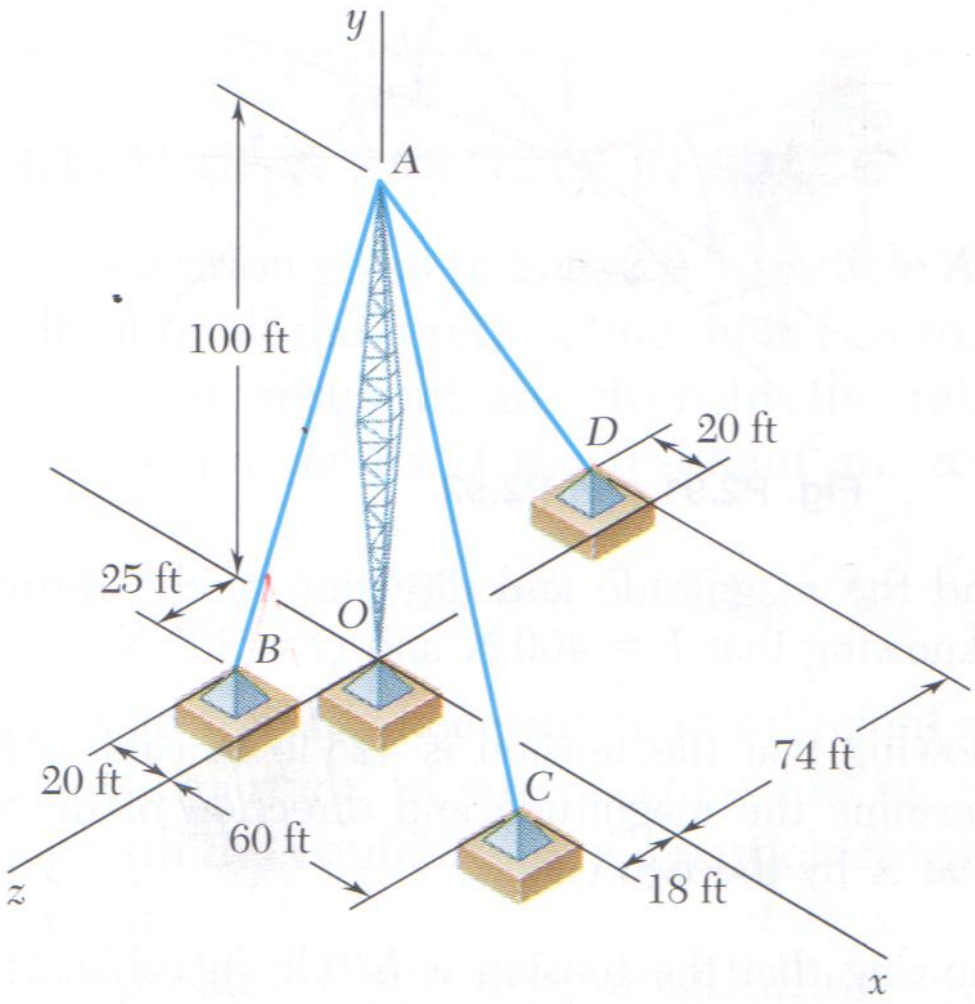


Fig. P2.87 and P2.88

2.88 A transmission tower is held by three guy wires anchored by bolts at B, C, and D. If the tension in wire AD is 315 lb, determine the components of the force exerted by the wire on the bolt at D.

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

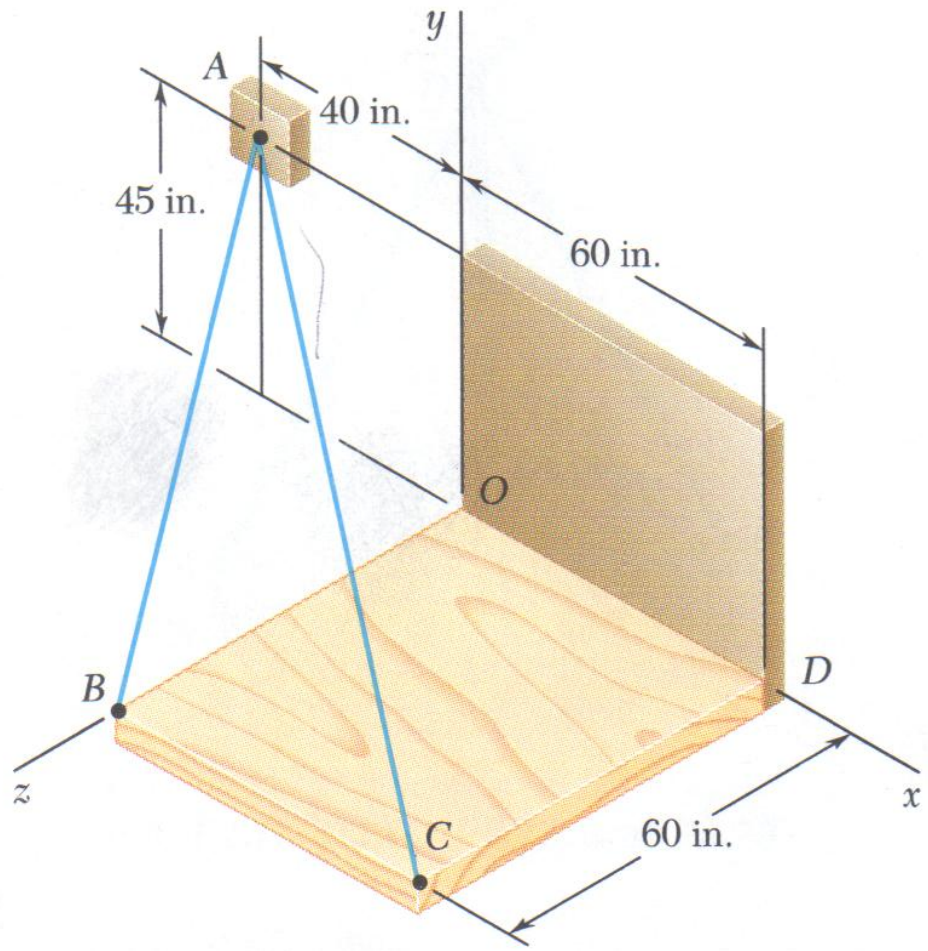
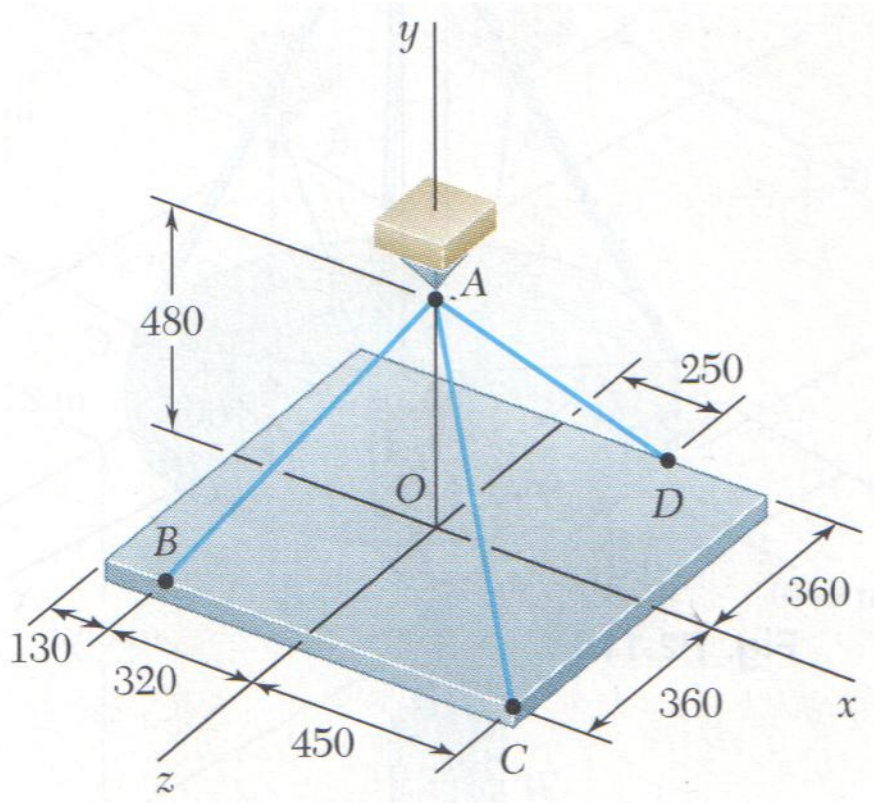


Fig. P2.93 and P2.94

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

2.109 A rectangular plate is supported by three cables as shown. Knowing that the tension in cable *AC* is 60 N, determine the weight of the plate.



Dimensions in mm

Fig. P2.109 and P2.110

2.110 A rectangular plate is supported by three cables as shown. Knowing that the tension in cable *AD* is 520 N, determine the weight of the plate.