

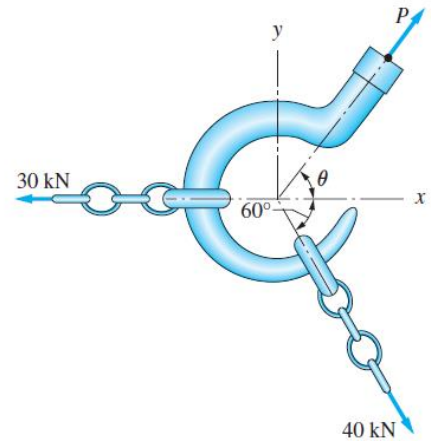
Statics ENCE233

HW (1): (Statics of Particles)

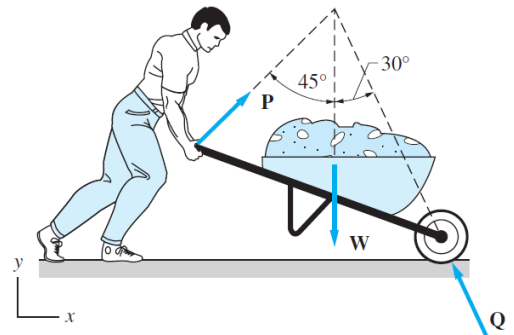
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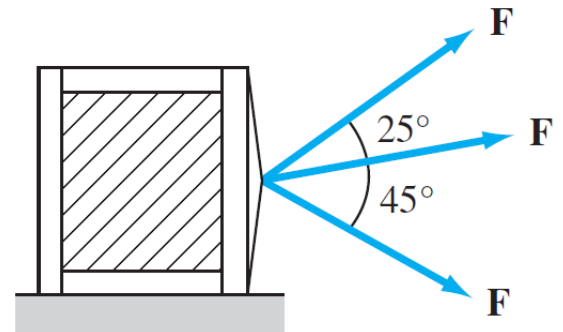
Q1. The resultant of the three forces shown is $\mathbf{R} = 85\mathbf{i} + 20\mathbf{j}$ kN. Determine P and θ .



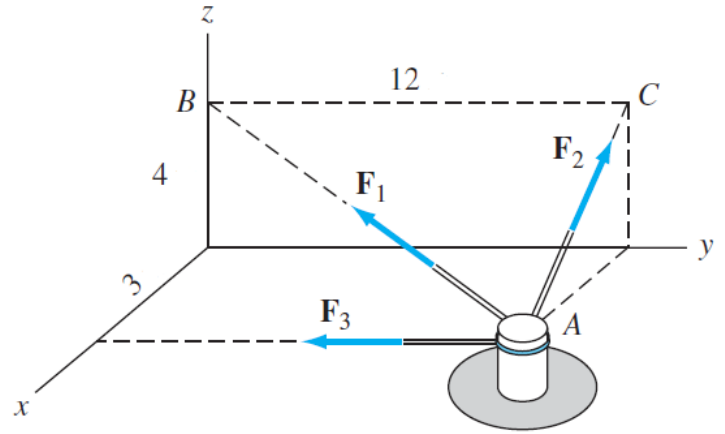
Q2. In the figure shown, if the resultant of the three forces is $\mathbf{R} = 10\mathbf{i}$ N, and knowing that $P = 50$ N. Determine W .



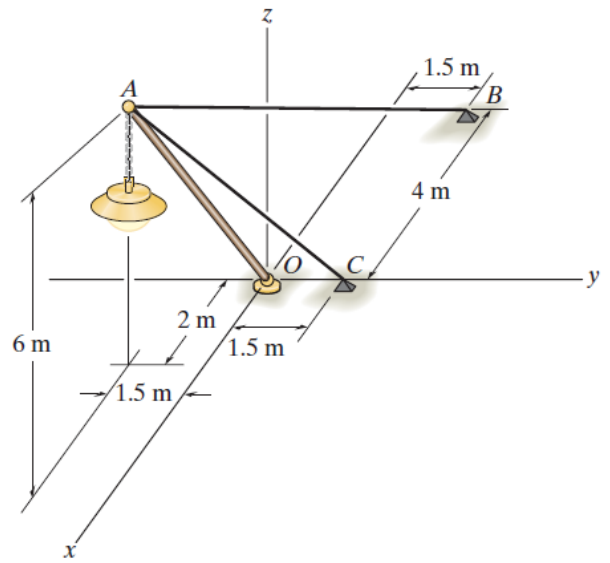
Q3. Determine F so that the three forces are equivalent to a single 6 kN force.



Q4. Knowing that $F_1 = 260$ N, $F_2 = 75$ N, and $F_3 = 60$ N. Determine the magnitude of the resultant of the three forces and the coordinates of the point where the line of action of R intersects the yz-plane. All dimensions are in mm.



Q5. Cables AB and AC can sustain a maximum tension of 500 N, and the pole can support a maximum compression of 300 N. Determine the maximum weight of the lamp that can be supported in the position shown. The force in the pole acts along the axis of the pole.



Q6. Determine the tension developed in cables AB and AC and the force developed along strut AD for equilibrium of the 400-lb crate.

