

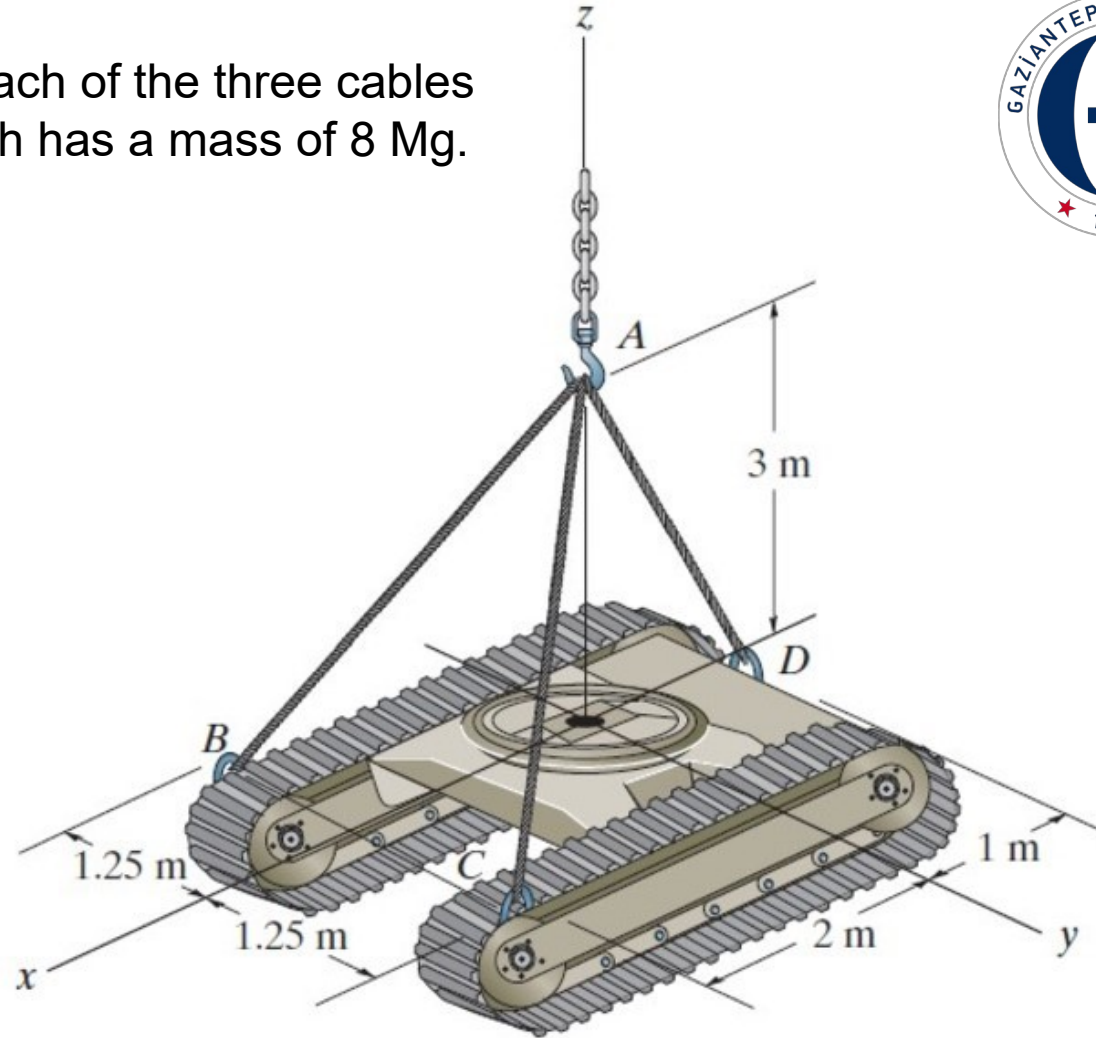
ME 201 STATICS



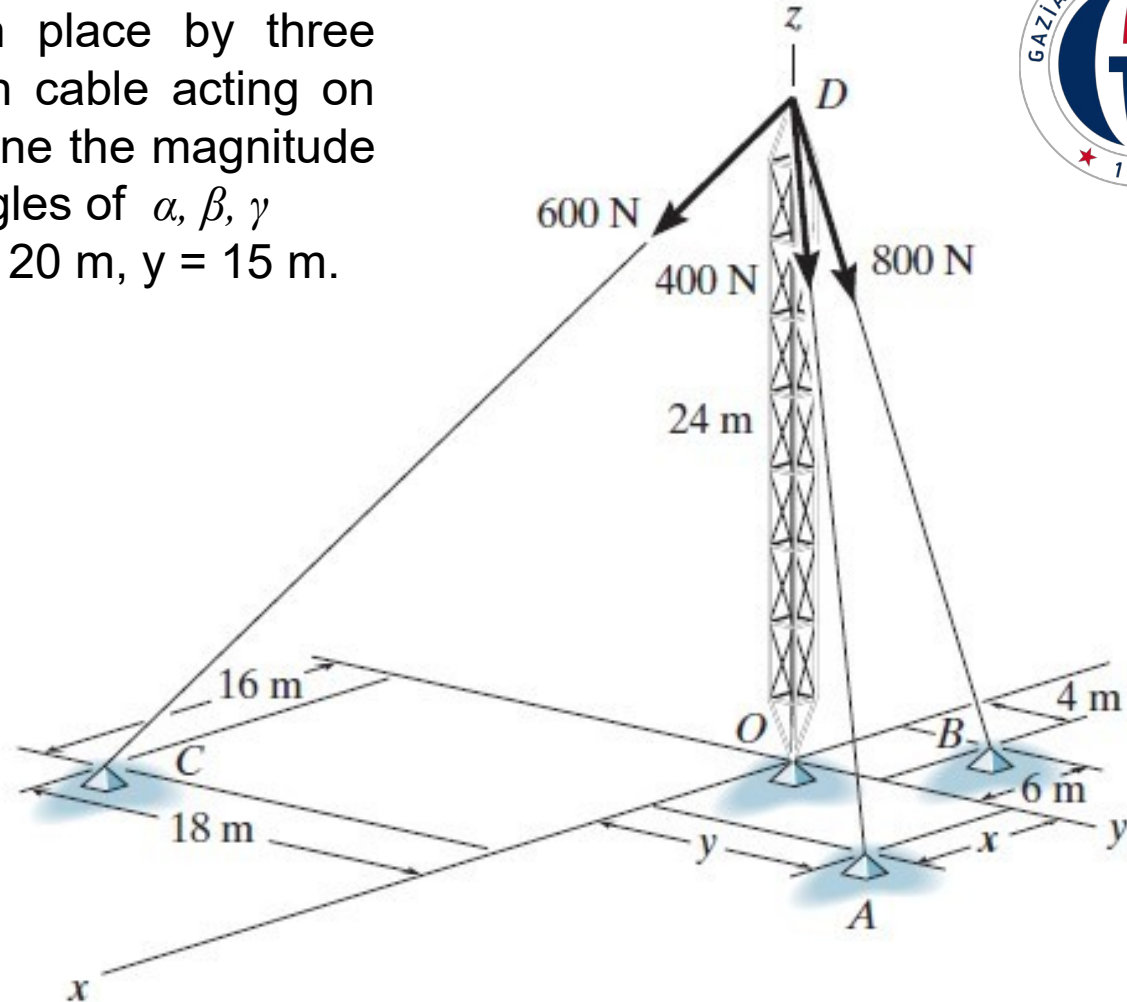
PROBLEM HOUR IV

3D FORCE SYSTEMS

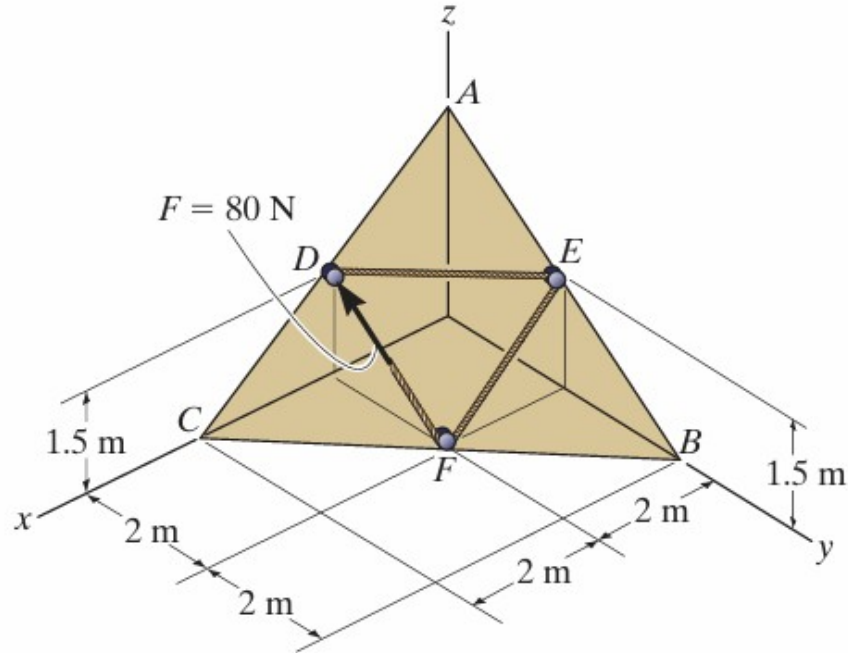
Q1) Determine the force in each of the three cables needed to lift the tractor which has a mass of 8 Mg.



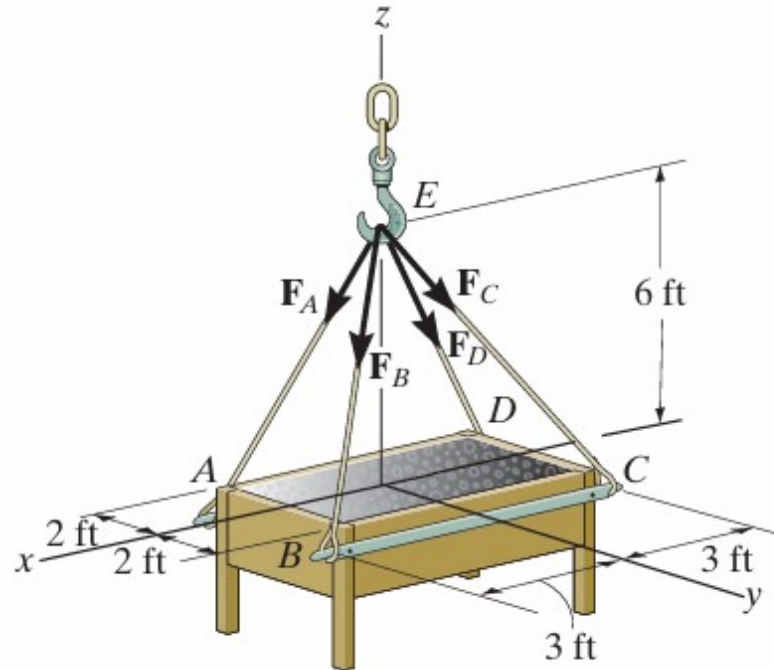
Q2) The tower is held in place by three cables. If the force of each cable acting on the tower is shown, determine the magnitude and coordinate direction angles of α, β, γ the resultant force. Take $x = 20$ m, $y = 15$ m.



Q3) Determine the projection of force $F = 80 \text{ N}$ line BC. Express the result as a Cartesian vector.



Q4) If the force in each cable tied to the bin is 70 lb, determine the magnitude and coordinate direction angles of the resultant force.



Q5) (Bonus Question) The door is held opened by means of two chains. If the tension in AB and CD is and , $F_A = 300$ N and $F_C = 250$ N respectively, express each of these forces in Cartesian vector form.

