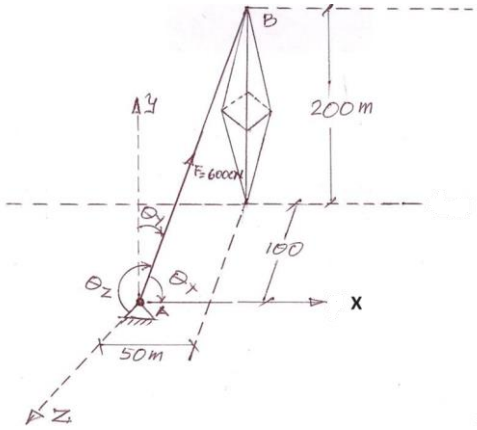
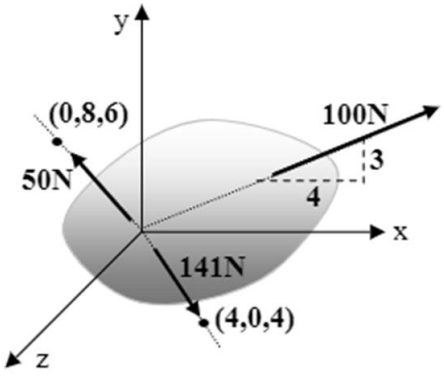
Class work problems on module 1.2 – 2024

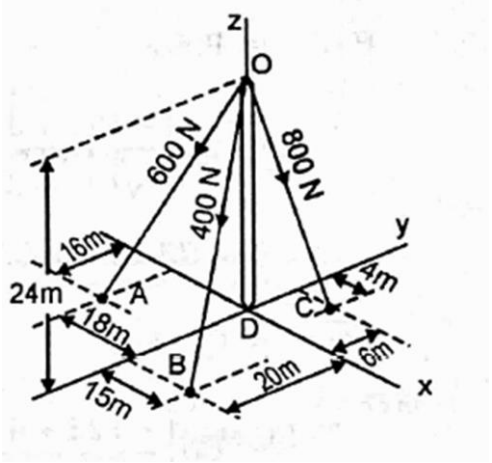
1. A tower guy wire is anchored by means of a bolt at A is shown in the following Figure. The tension in the wire is 6000 N. Determine
   (a) The components F_x, F_y, F_z of the forces acting on the bolt.
   (b) The angles θ_x, θ_y, θ_z defining the direction of the force.

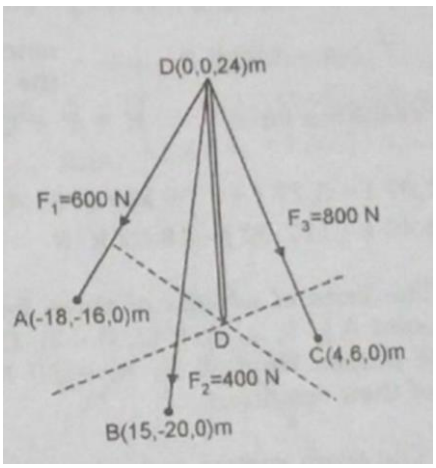


2. Find the resultant of the three concurrent forces (passing through origin) shown in the figure. The 100 N force lies in the X-Y plane.



3. The tower is held in place by three cables. If the force of each cable acting on the tower is as shown in figure, determine the resultant.





4. A force of magnitude 50 kN is acting at point A (2,3,4) m towards point B (6, -2, -3) m. Find the moment of the given force about a point D (-1, 1, 2) m

5. The resultant of the three concurrent space forces at A is R = -788j N. Find the magnitude of F_1, F_2 and F_3 force.