

Note: Answer with drawing F.B.D will get zero.

1- Determine the x and y components of each of the forces shown in figure 1&2

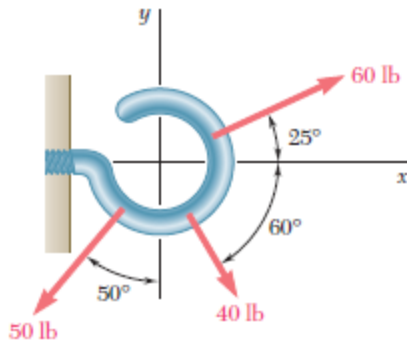


Fig.1

2 - Resolve each force acting on the *gusset plate* into its x and y components, and express each force as a Cartesian vector.

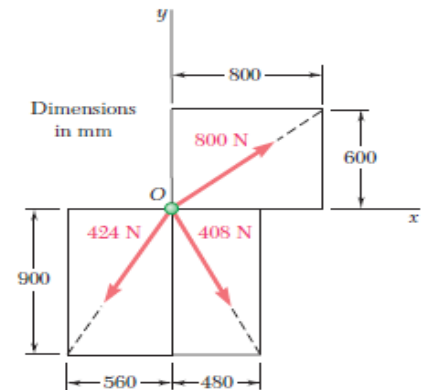
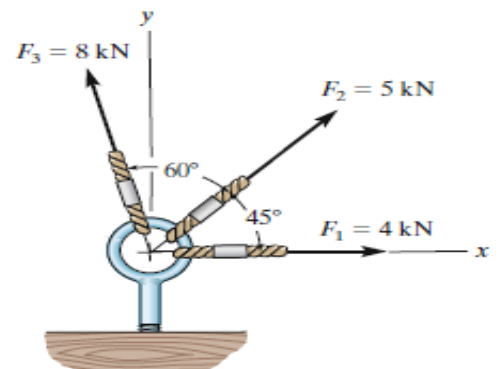
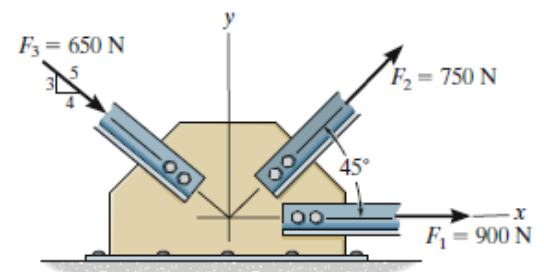
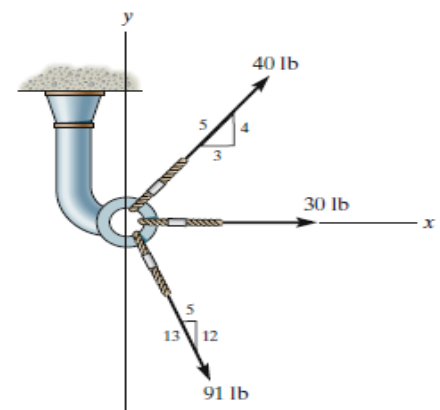


Fig.2

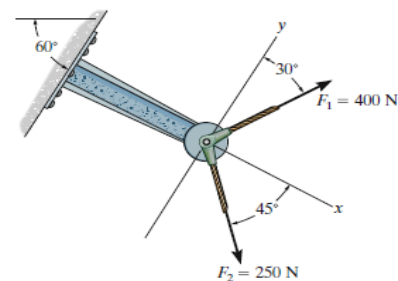
3 - Determine the magnitude of the resultant force and its direction, measured counterclockwise from the positive x axis.



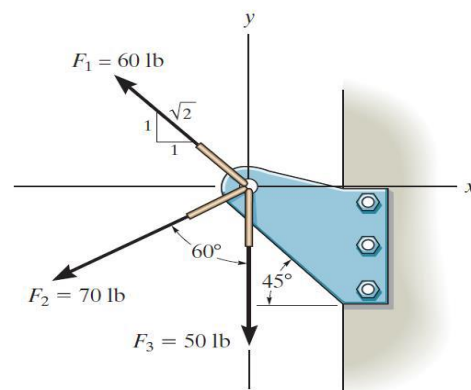
4 - Determine the magnitude of the resultant force and its direction, measured clockwise from the positive x axis.



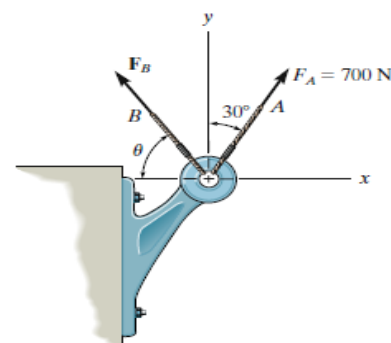
5 - Determine the magnitude of the resultant force and its direction measured counterclockwise from the positive x axis.



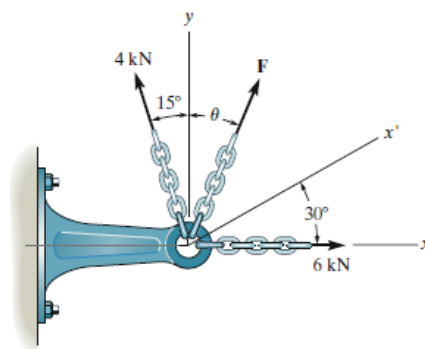
6 - Determine the magnitude of the resultant force and its direction measured counterclockwise from the positive x axis.



7 - Determine the magnitude and orientation θ of F_B so that the resultant force is directed along the positive y axis and has a magnitude of 1500 N.



8 - Three forces act on the bracket. Determine the magnitude and direction θ of $\mathbf{F}$ so that the resultant force is directed along the positive x' axis and has a magnitude of 8 kN.



9 - Three forces act on the bracket. Determine the magnitude and direction θ of F_1 so that the resultant force is directed along the positive x' axis and has a magnitude of 800 N.

