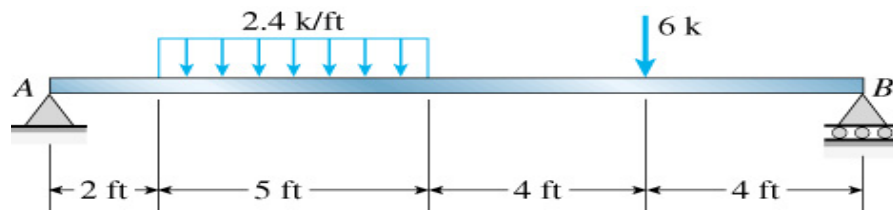


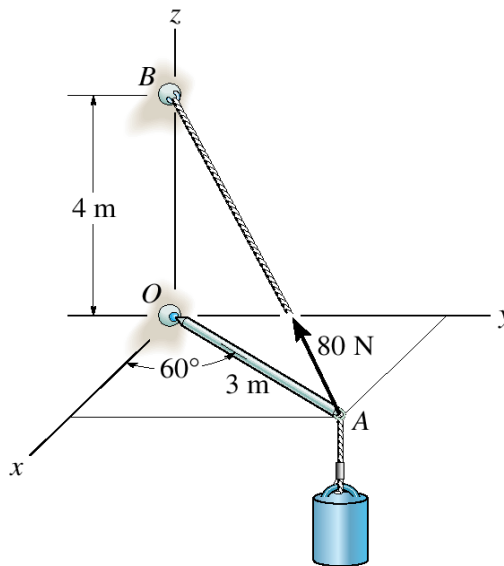
PROB-1-

Draw the moment and shear diagrams.



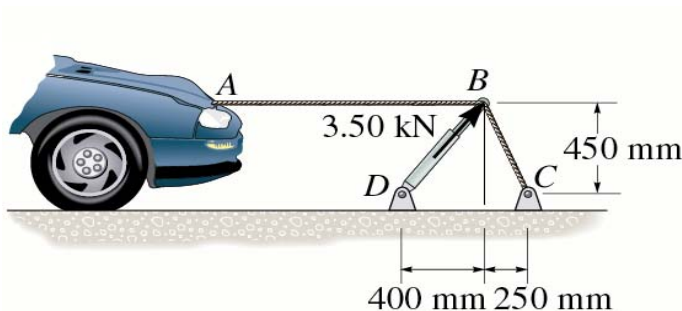
PROB-2-

Cable AB exerts a force of 80 N on the end of the 3-m long boom OA. Determine the magnitude of the projection of this force along the boom.



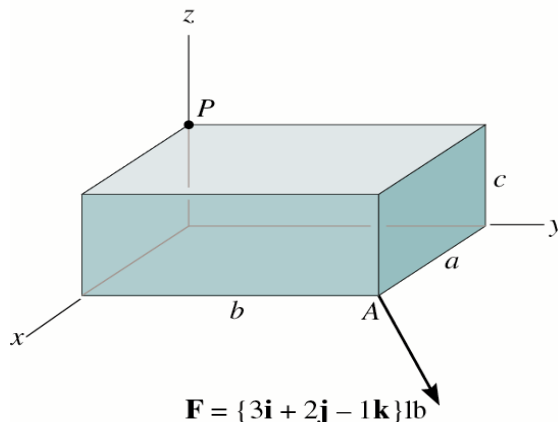
PROB-3-

The device shown is used to straighten the frames of wrecked autos. Determine the tension of each segment of the chain, i.e., AB and BC, if the force which the hydraulic cylinder DB exerts on point B is 3.50 kN.



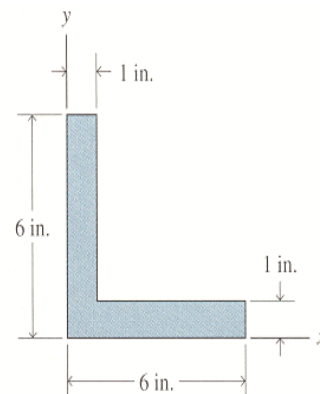
PROB-4-

The applied force \mathbf{F} creates a moment about point P of $\mathbf{M}_P = \{-1\mathbf{i} - 3\mathbf{j} - 9\mathbf{k}\}$ lb.in. If $a = 3$ in, determine the dimensions b and c of the block.



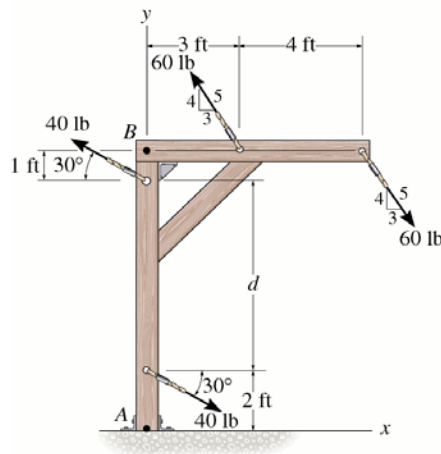
PROB-5-

Determine the location of the x and y centroidal axes and the moment of inertia about the x and y centroidal axes.



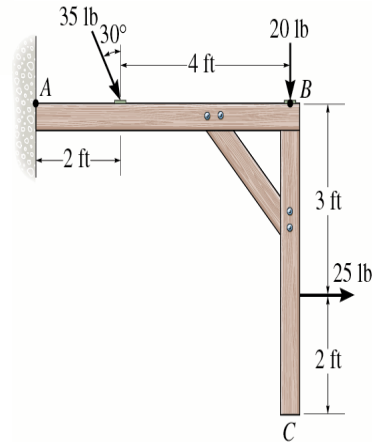
PROB-6-

Two couples act on the frame. If $d = 4$ ft, determine the resultant couple moment.



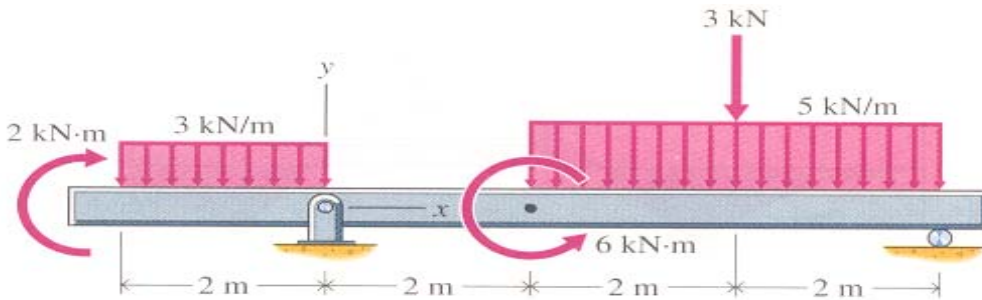
PROB-7-

Replace the force system acting on the frame by an equivalent resultant force and couple moment acting at point A.



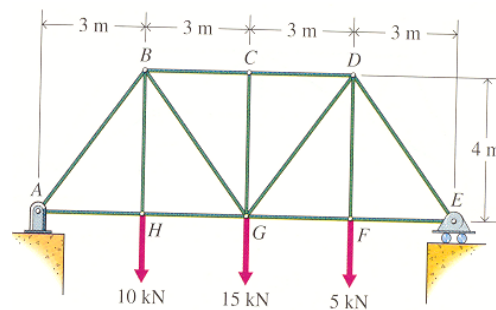
PROB-8-

Draw the moment and shear diagram for the beam shown below.



PROB-9-

Determine the bar forces in members CD, BG, and DF.



PROB-10-

A block that weights 500N, is supported by a system of cables. Determine the tensions in cables A, B, and C.

