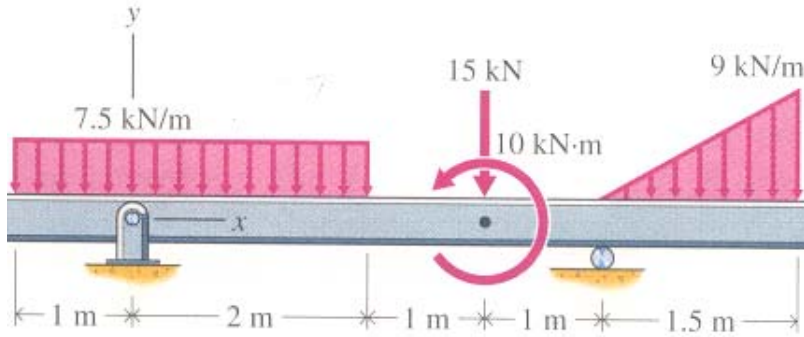


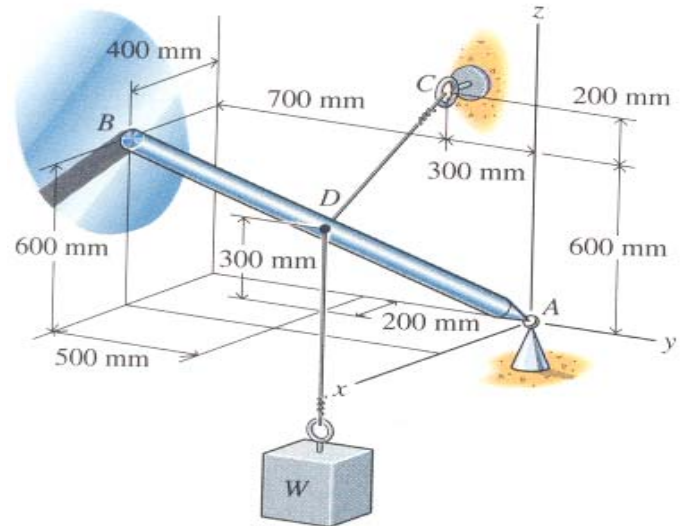
PROB-1-



For the beam shown to the left, write the shear and moment equations for x between 3 and 4 m and also for x between 4 and 5.5 m.

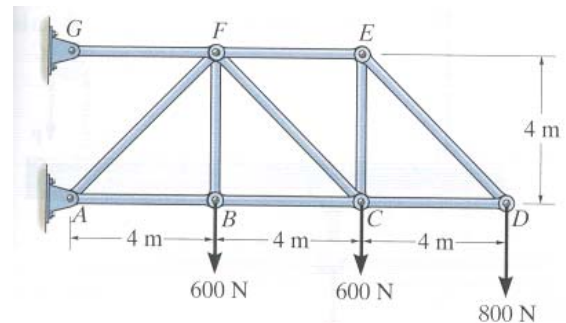
PROB-2-

The block W shown has a weight of 2500 N. Bar AB rests against a smooth vertical wall at end B and is supported at end A with a ball-and-socket joint. The two cables are attached to a point D on the bar midway between the ends. Determine the reactions at supports A and B and the tension in cable CD .



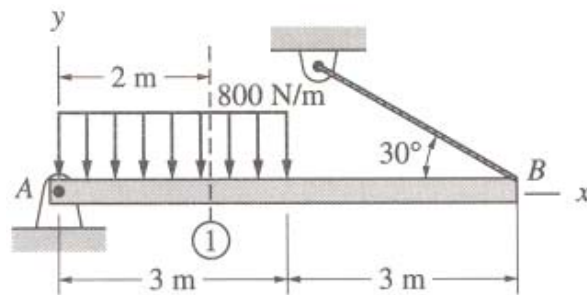
PROB-3-

The truss is subjected to loading as shown. Determine the forces in members ED , AB , and FC , and state whether the members are in tension or compression.



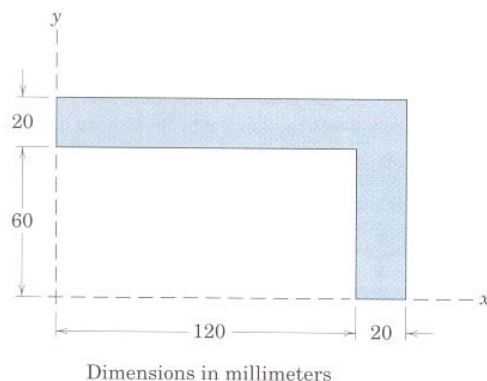
PROB-4-

The beam is supported by a pin at A and a cable at B , carries a uniformly distributed load over its left half. Neglecting the weight of the bar, determine the normal force, shear force, and bending moment acting on the cross section at section (1) shown in the figure..



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-

A cable is attached to the structure at E, passes around the 0.8m diameter, frictionless pulley at A and then is attached to a 1000-N weight W. Determine all forces acting on member ABCD. The supports are a pin at D and a smooth surface at G.

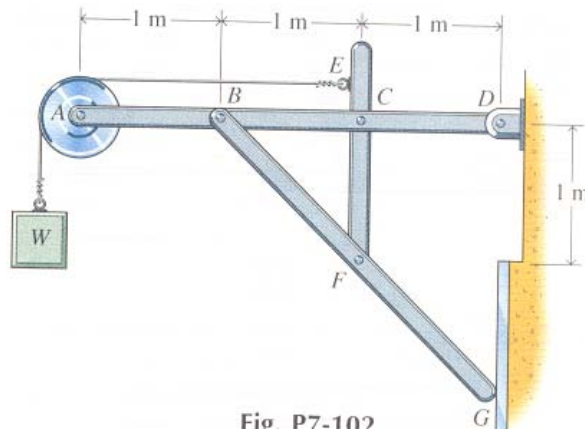
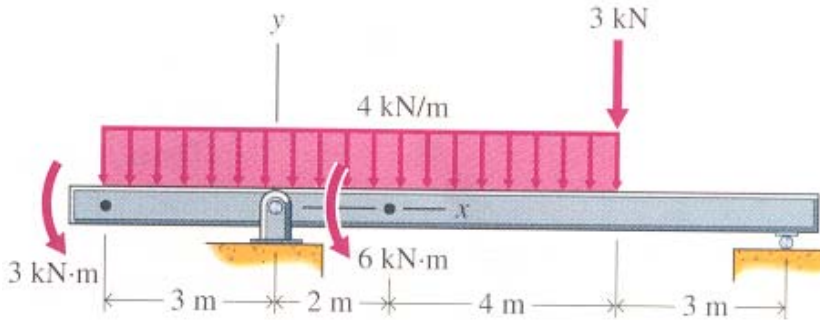


Fig. P7-107

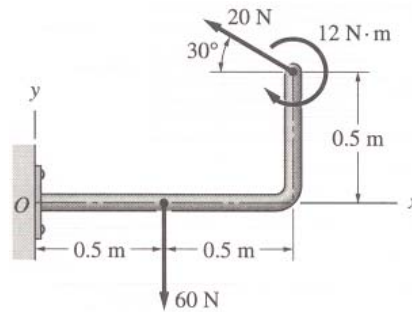
PROB-7-

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



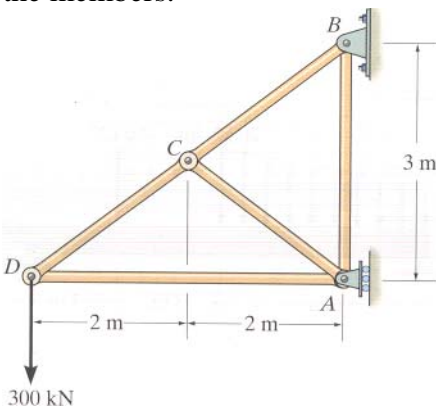
PROB-8-

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



PROB-9-

For the truss below, determine the bar forces in all the members.



PROB-10-

Three forces are acting on the transmission tower as shown to the right. The bottom of the tower is fixed. Determine the reactions at the bottom of the tower.

