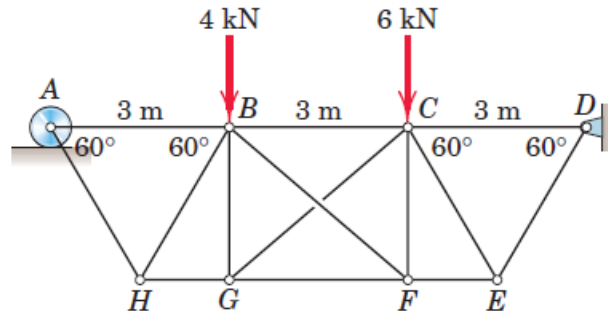


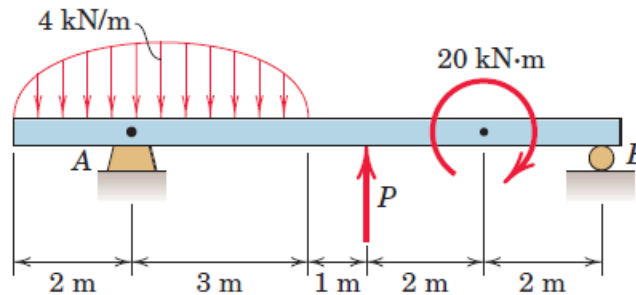
Homework – 4

Problem 1: Calculate the forces in all the members of the truss given in the figure below. Members BF and CG are cables which can support tension only.

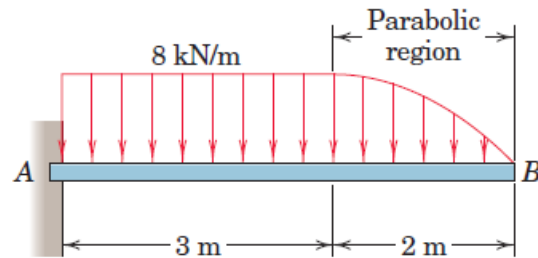


Problem 2: The beam is subjected to an elliptical load distribution and the point loads shown.

- (a) For what value of the force P will the reaction at B go to zero?
- (b) Does a value for P exist for which the reaction at A will go to zero? If yes, find this value.



Problem 3: Draw the shear-force and bending-moment diagrams for the loaded beam given in the figure below.



Problem 4: Consider the shaded area given in the figure below.

- Calculate the moments of inertia with respect to the x and y axes.
- Find the polar moment of inertia.
- Calculate the product of inertia.
- Find the centroid of this area.
- Calculate the moments of inertia with respect to the centroidal axes parallel to the x and y axes.
- Calculate the product of inertia with respect to the centroidal axes parallel to the x and y axes.

