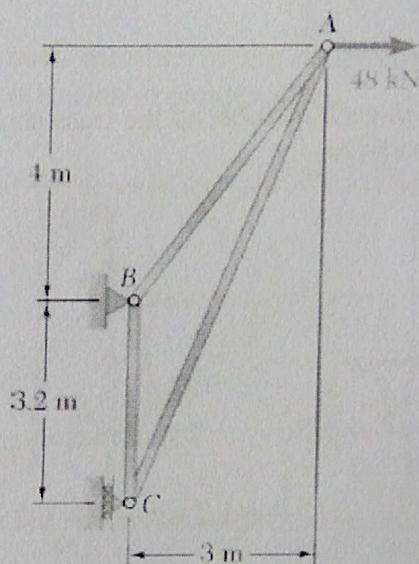


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NITK SURATHKAL

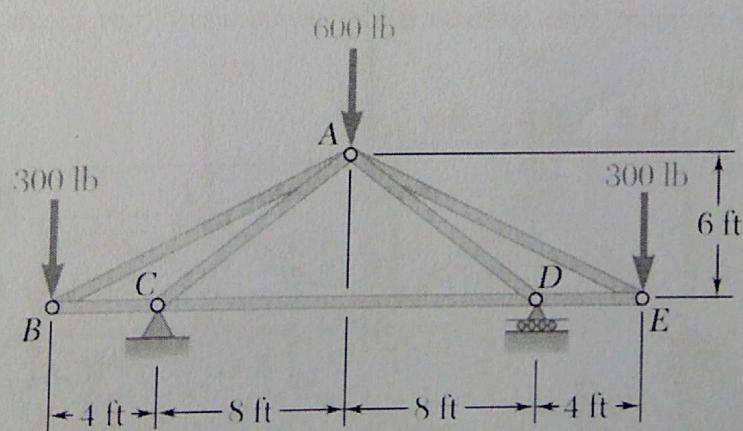
ENGINEERING MECHANICS [AM110]

ASSIGNMENT -3

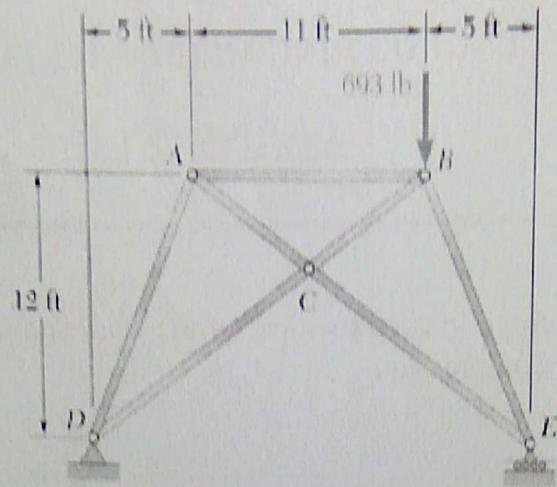
-
- Determine the force in each member of the truss shown. State whether each member is in tension or compression.



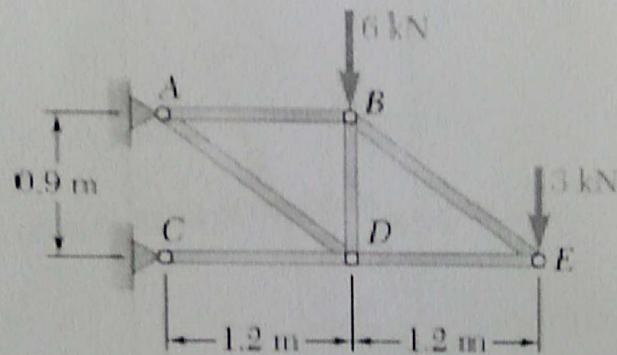
- Determine the force in each member of the truss shown. State whether each member is in tension or compression.



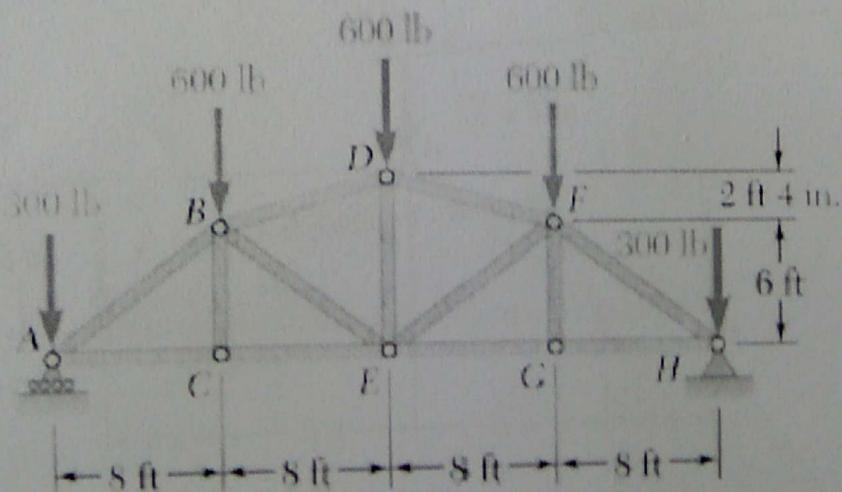
3. Determine the force in each member of the truss shown. State whether each member is in tension or compression.



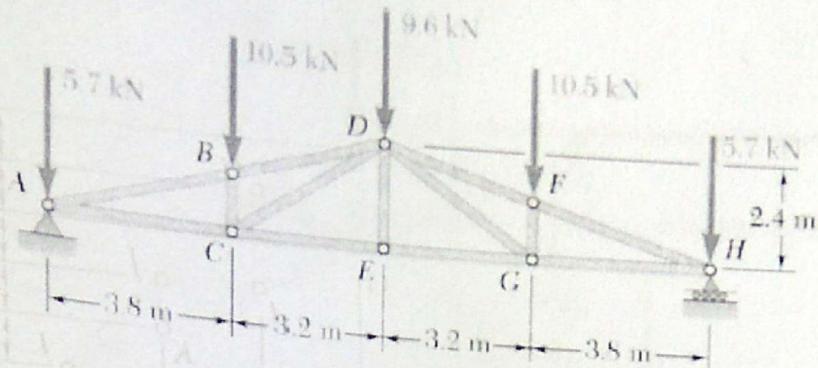
4. Determine the force in each member of the truss shown. State whether each member is in tension or compression.



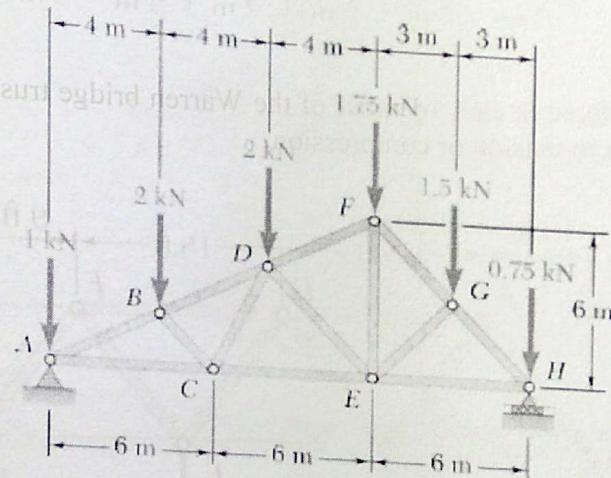
5. Determine the force in each member of the Gambrel roof truss shown. State whether each member is in tension or compression.



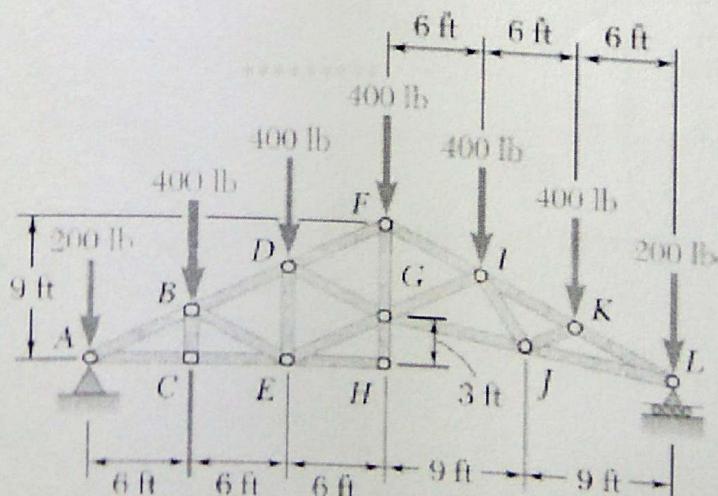
6. Determine the force in each member of the Pratt roof truss shown. State whether each member is in tension or compression.



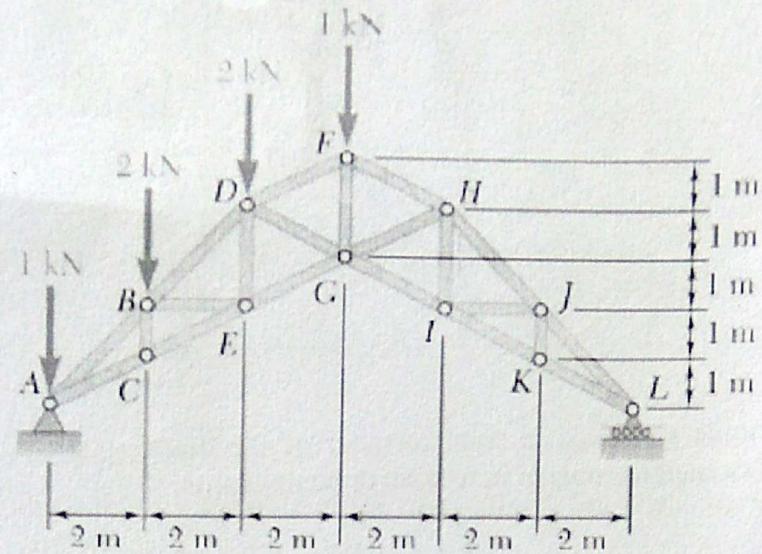
7. Determine the force in each member of the double-pitch roof truss shown. State whether each member is in tension or compression.



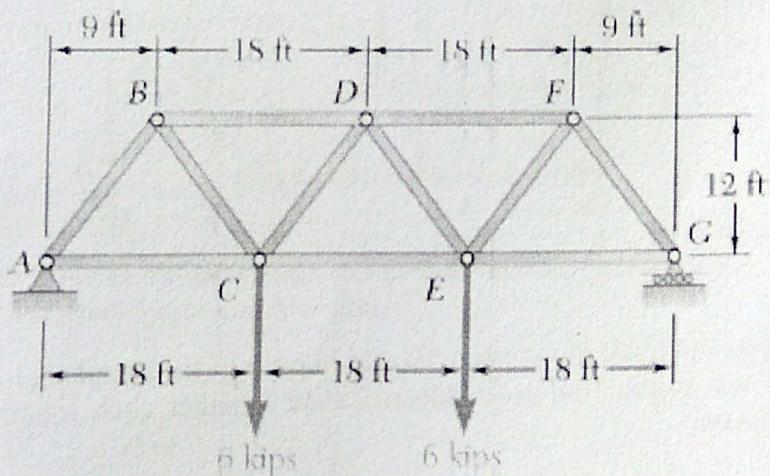
8. Determine the force in member FG and in each of the members located to the right of FG for the studio roof truss shown. State whether each member is in tension or compression.



9. Determine the force in each of the members located to the left of FG for the scissors roof truss shown. State whether each member is in tension or compression.



10. Determine the force in each member of the Warren bridge truss shown. State whether each member is in tension or compression.

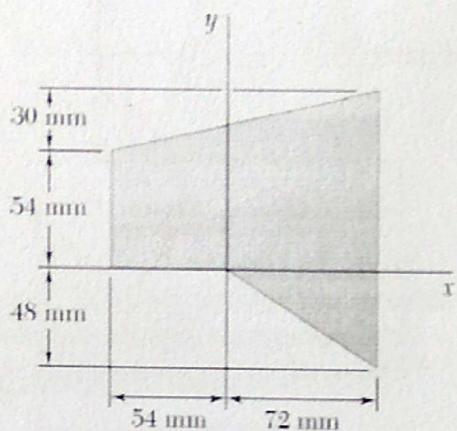


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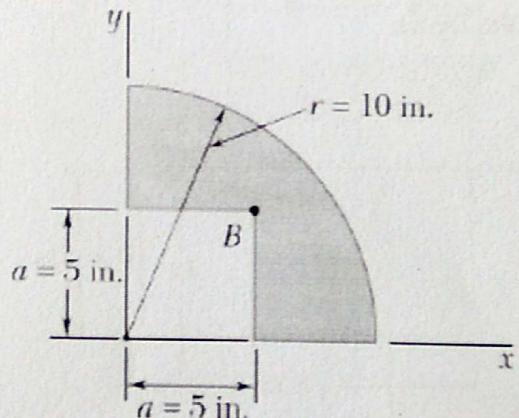
ENGINEERING MECHANICS [AM110]

ASSIGNMENT -4

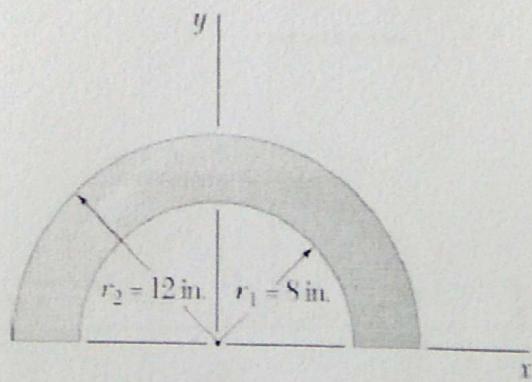
1. Locate the centroid of the plane figure.



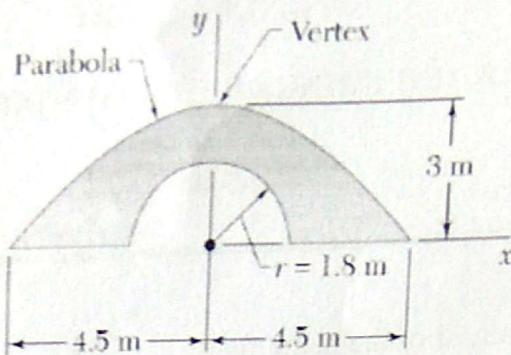
2. Locate centroid of the figure.



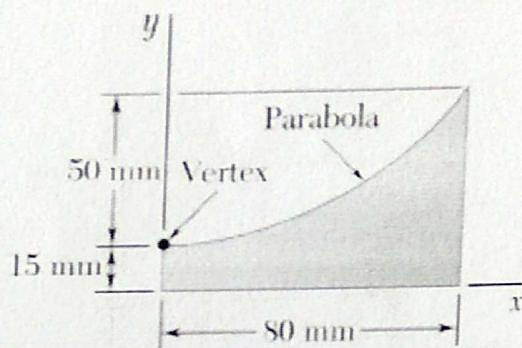
3. Locate centroid of the figure.



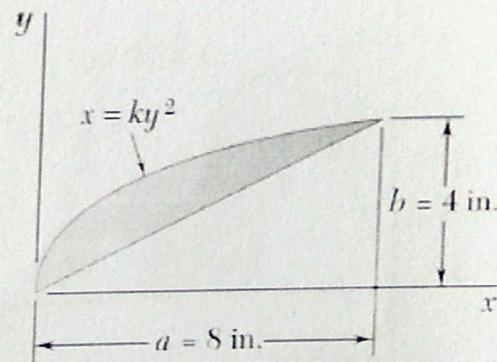
4. Locate centroid of the figure.



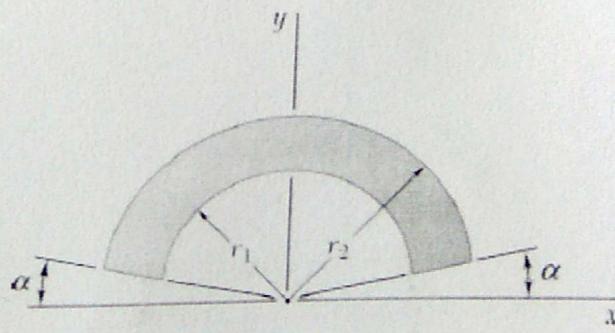
5. Locate centroid of the figure.



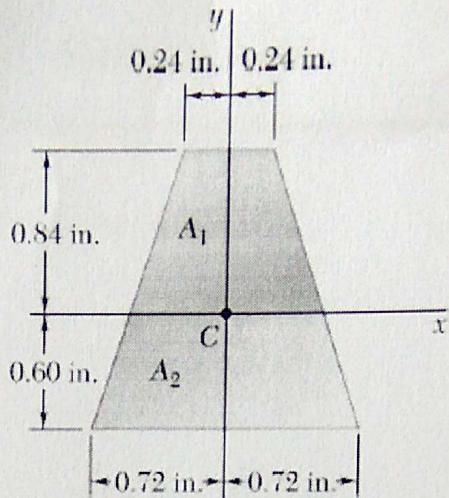
6. Locate centroid of the figure.



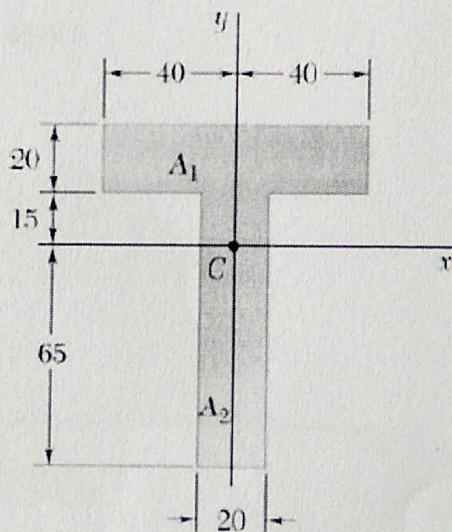
7. Determine the y -coordinate of the centroid of the shaded area in terms of r_1 , r_2 and α .



8. The horizontal x-axis is drawn through the centroid C of the area shown, and it divides the area into two component areas A_1 and A_2 . Determine the first moment of each component area with respect to the x-axis.



9. The horizontal x-axis is drawn through the centroid C of the area shown, and it divides the area into two component areas A_1 and A_2 . Determine the first moment of each component area with respect to the x-axis.



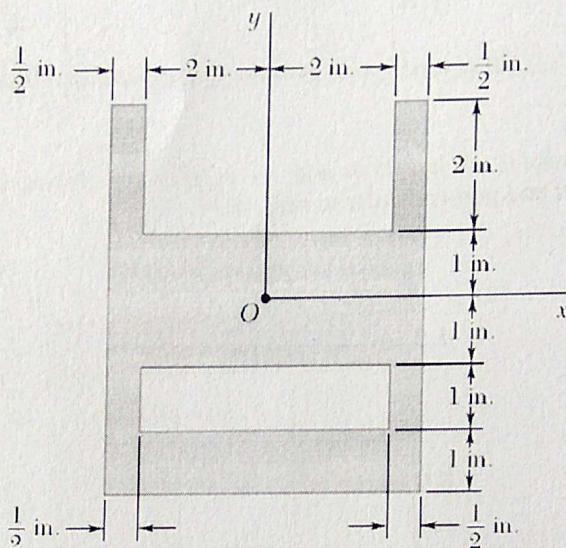
Dimensions in mm

DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS
NITK SURATHKAL

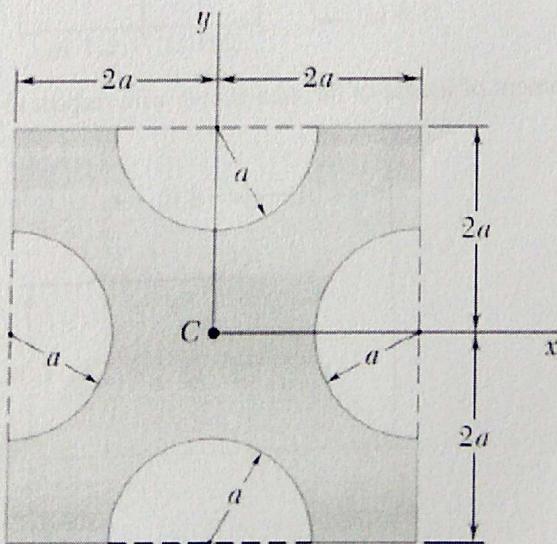
ENGINEERING MECHANICS [AM110]

ASSIGNMENT - 5

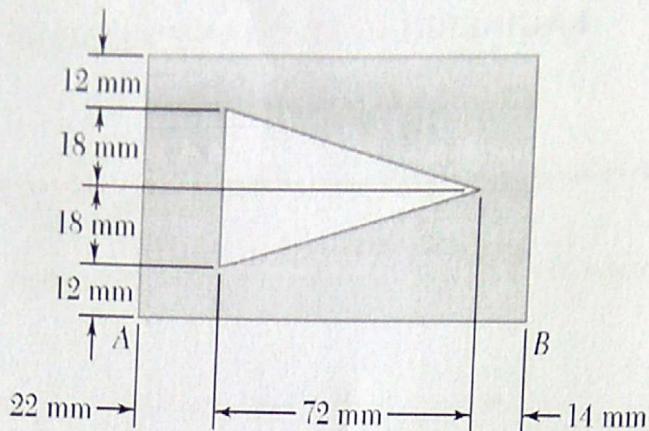
-
- Determine the moment of inertia and the radius of gyration of the shaded area with respect to the x axis.



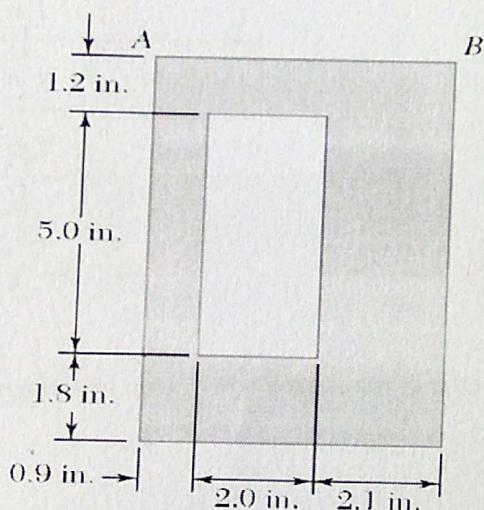
- Determine the moments of inertia of the shaded area shown with respect to the x and y axes when $a = 20 \text{ mm}$.



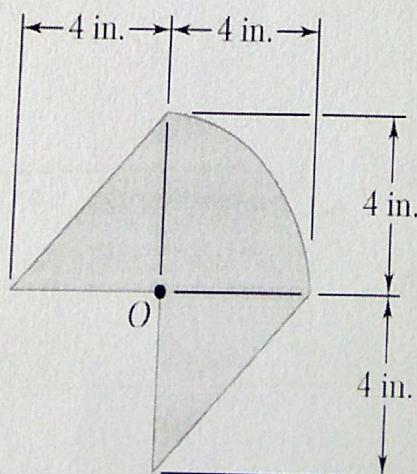
3. Determine the moments of inertia I_x and I_y of the area shown with respect to centroidal axes respectively parallel and perpendicular to side AB .



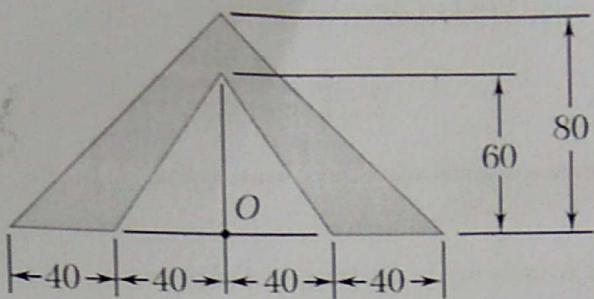
4. Determine the moments of inertia I_x and I_y of the area shown with respect to centroidal axes respectively parallel and perpendicular to side AB .



5. Determine the moment of inertia of the area shown with respect to (a) Point O , (b) the centroid of the area.



6. Determine the moment of inertia of the area shown with respect to (a) Point O , (b) the centroid of the area.



Dimensions in mm

7. Determine the moment of inertia of the area shown with respect to (a) Point O , (b) the centroid of the area.

