

- If a truss is in equilibrium, each joint must be in equilibrium.
- The method of joints consists of satisfying the equilibrium equations for forces acting on each joint.

$$\sum F_x = 0 \qquad \sum F_y = 0$$



 Method of Joints

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Method of Joints

procedure for analyzing a truss using the method

 If possible, solve the equilibrium equations at a joint with only two unknown reactions. Work your way from joint to joint, selecting the new joint using the

simultaneously, typically using a computer or an

Procedure for analysis - the following is a

criterion of two unknown reactions.

5. Solve the joint equations of equilibrium

advanced calculator.



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of joints:







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- Truss analysis may be simplified by determining members without loading or zero-force.
- These members may provide stability or be helpful if the loading changes.
- Zero-force members may be determined by inspection of the joints



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**Zero Force Members** 



Method of Joints	
The equations of equilibrium for Joint C	
600 lb.	$F_{F_{x}} = 0 = -\frac{4}{5}F_{BC} + \frac{4}{5}F_{CD} \qquad F_{BC} = F_{CD}$ $f_{F_{y}} = 0 = -\frac{3}{5}F_{BC} - \frac{3}{5}F_{CD} - 800 \text{ lb.}$ $F_{BC} = -666.7 \text{ lb.}$ $F_{BC} = 666.7 \text{ lb.} (C)$



