Method of Sections

- If the forces in only a few members of a truss are to be determined, the method of sections is generally the most appropriate analysis procedure.
- The method of sections consists of passing an imaginary line through the truss, cutting it into sections.
- Each imaginary section must be in equilibrium if the entire truss is in equilibrium:

\[ \sum F_x = 0 \quad \sum F_y = 0 \quad \sum M_z = 0 \]

Method of Sections

Procedure for analysis - the following is a procedure for analyzing a truss using the method of sections:

1. First, if necessary, determine the support reactions for the entire truss.
2. Next, make a decision on how the truss should be "cut" into sections and draw the corresponding free-body diagrams.
3. Try to apply the three equations of equilibrium such that simultaneous solution is not required.

Moments should be summed about points that lie at the intersection of the lines of action of two unknown forces, so that the remaining force may be determined.

Example: Determine the forces BC, BG, HG, and CG in the following truss.
Method of Sections

Example: Determine the forces BC, CG, and GF in the following truss.

Method of Sections

Example: Determine the forces in all bars of the truss.

End of Trusses - Part 3

Any questions?