

Truss Analysis

Civil Engineering

Method of joints and method of sections.

Pin-jointed members, loads applied at the nodes only.

1

Check determinacy

A determinate plane truss satisfies $m + r = 2j$.

2

Find the reactions

Treat the whole truss as one rigid body in equilibrium.

3

Spot zero-force members

Unloaded two-member node, or a third member in line with two.

4

Method of joints

Work node to node, always where only two forces are unknown.

5

Method of sections

Cut three members, then take moments to isolate the one you want.

6

Label tension or compression

A force pulling away from the node is tension.

Educational reference. Real trusses carry joint stiffness and eccentricity; member design follows the code.